Managing Risk and Profits / Dairy™ Decision-aid Software Program

User Manual and Guidebook©
Version 2.0

Cameron Thraen, Normand St-Pierre, Wayne Knoblauch

User's Guidebook Version 2.01
Release Date
January 1, 2002

Note: To use the hyperlink feature activate the Web Toolbar when viewing from Microsoft Word

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INTRODUCTION

The Managing Risk and Profits / Dairy™ (MRP/D) decision-aid software program is designed to help dairy farmers and agribusiness persons understand contemporary risks associated with producing and marketing milk in today's volatile economic environment.

This Windows 2000© Managing Risk and Profits / Dairy™ software program is designed to enable the user to apply what is being learned in the Integrated Dairy Risk Management Educational Curriculum to the user's farm business. This software can be used directly by a farmer to create a personalized marketing and cash flow risk management plan. The program can be used by county agents, insurance companies, and other agribusinesses to assist dairy clientele in better marketing management. The general process to use this program is to enter variable costs and additional support data for producing new crop grains and forage crops, for producing milk and raising heifers, and for storing grain into the following crop year. Operating expense allocations are entered for the farm along with total operating expenses for Livestock, Machinery, Labor, Land & Buildings, Family Living, Scheduled Payments, and Miscellaneous accounts. Different marketing alternatives and insurance products can be selected to limit price and production risks and to manage cash flow obligations. Other sources of income and liquid assets are included and may be used to offset cash flow short falls. Risk position summaries, per hundredweight or per bushel breakeven costs and cash flows, net open (short or long positions) milk and grain positions, and profits or losses are reported for each dairy and crop enterprise. Projected incomes and costs are also reported for the dairy farm.

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Applications and the results may vary depending upon the user's financial position. Individuals with high debt-to-asset ratios and/or significant cash flow requirements may need to use insurance products and marketing alternatives to manage crop yields, price risks and profits. Those who are financially secure may also choose to use these risk management tools or they may elect to self-insure. Realizing that one risk management program does not fit the needs of all producers, this software program is designed to help individual farmers design a risk management plan that best fits their unique risk management and profit objectives. This software is not intended to be used as a precise farm accounting system or for income tax computations, but as a tool for evaluating production and marketing risks.

Once a user is familiar with the operation of the MRP/Dairy™ software program, customized financial and marketing reports can be prepared for the farm. The logic and process for this program will not change, as later versions of the program are developed to reflect the introduction of new insurance products, marketing alternatives, public policies, and probability distributions. Learning this software program will prepare and orient the user to quickly learn updated releases of this software that will reflect changes in policy and economic environment. Changes will also be incorporated based on suggestions by end users.

Suggested Background Reading

Before using this computer model, consider reading the MRP tutorial curriculum found at the Internet Web site: http://www-agecon.ag.ohio-state.edu/dairyRME, or on the MRP / Dairy™ CD-ROM. For additional information on financial concepts please refer to the paper by Dr. William Edwards, "Financial Considerations in Managing Risks and Profits." Module 3, which can be found at the Internet Website: http://www.econ.iastate.edu/agrisk/module/module3.htm

To help dairy producers, educators, and agribusiness persons understand how to use this software, this manual was written using a case study farm, Bella Acres Dairy. To become familiar with the physical and financial structure of the case farm please read the Bella Acres Dairy: Case Farm paper. Reading this paper will provide a complete background on the farm and data that you will find already entered into the MRP/Dairy™ database.

This document is a step-by-step approach that begins with data entry and progresses to reading and understanding each of the reports. Each input and report screen is reproduced as a figure so that the data can be reviewed as the user proceeds and all reports can be interpreted.[2]

[2] For teaching purposes or for other uses, all data entries and reports for this case farm are included on the diskette or CD in a folder called CaseFarm. To reload this data if necessary, please refer to the section of the manual titled **Opening a File or Retrieving Data**.

Installing Software Using the Floppy Disk

The Managing Risk and Profits / Dairy™ (MRP/D) software program will run on Windows 95, Windows 98, or Windows 2000 software. To get started, insert the MRP diskette in the external (A:) drive. Copy the file: MrpDairy.exe to a subdirectory on your hard disk. Open Windows Explorer to the subdirectory where you have stored the MrpDairy.exe file. Double-click on the file to start the installation process. The file is a self-extracting *.EXE and will create a subdirectory on your C: drive called MRPD. The program files will be copied to that directory. To execute the program create a shortcut to the file mrp.exe and then run this file. The program will start.

Installing Software Using the CD-ROM

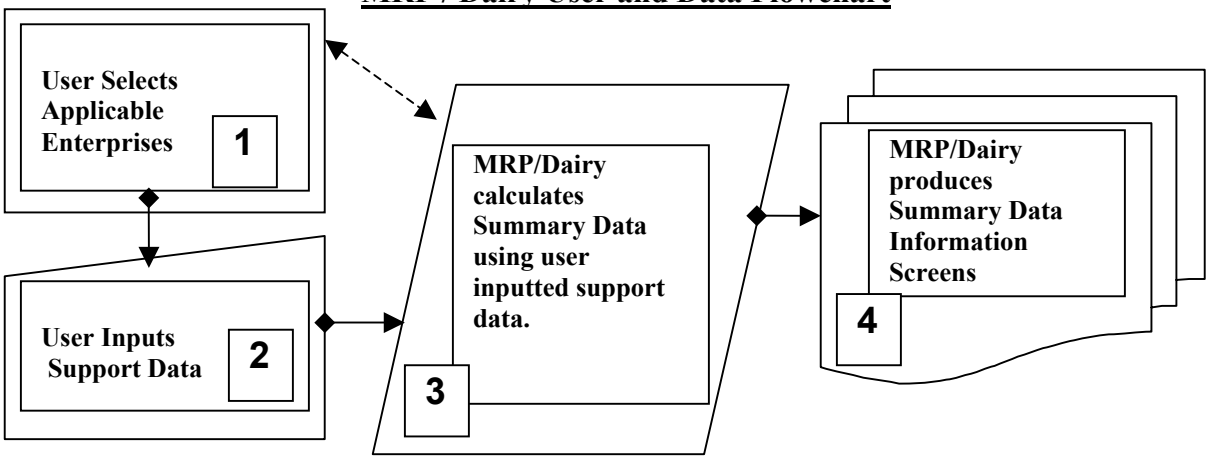
Insert the MRP CD-ROM in the CD drive. From the CD-ROM double-click on the installation program **MrpDairy.exe** located in the **MrpDairyProgram** subfolder. Follow the on-screen installation instructions. This program will install all of the MrpDairy program contents to your hard disk. On your desktop create a shortcut to the file **mrp.exe**, which is located in the **MrpDairy folder**. To start the Mrp/Dairy program double-click on this shortcut.

NOTE: ***You cannot run the Mrp/Dairy software directly from the CD-ROM drive. MRP/Dairy software must be able to write to files contained in the program and this is not possible with a CD-ROM drive.***

How to use the MRP / Dairy™ User's Guidebook©

Managing Risk and Profits / Dairy™ User's Guidebook contains a complete and thorough explanation of each aspect of the Managing Risk and Profits / Dairy™ program. This guidebook will take the user through a complete tutorial. All numbers used in this tutorial are based on the structure of the Bella Acres Dairy operation. These explanations will cover both the economic logic and the actual function of the software. Reminder: To get the most understanding out of this tutorial you should read the Bella Acres Dairy Case Study before you begin working with the User's Guidebook to Managing Risk and Profits / Dairy™. Before you begin a thorough exploration of the MRP / Dairy™ program, take a moment to study the following schematic on the data flow within the program:

MRP / Dairy User and Data Flowchart



The general flow of information progresses with the user [1] Selecting Enterprises, the user [2] Inputting Support Data for those enterprises, [3] MRP/Dairy™ program making the necessary calculations to produce the Summary Data and [4] MRP/Dairy™ outputting the Summary Data information screens.

GETTING STARTED WITH THE MRP / DAIRY™ PROGRAM

This section will provide general instructions on the function of the MRP / Dairy™ database input menus and data input screens. The topics covered include:

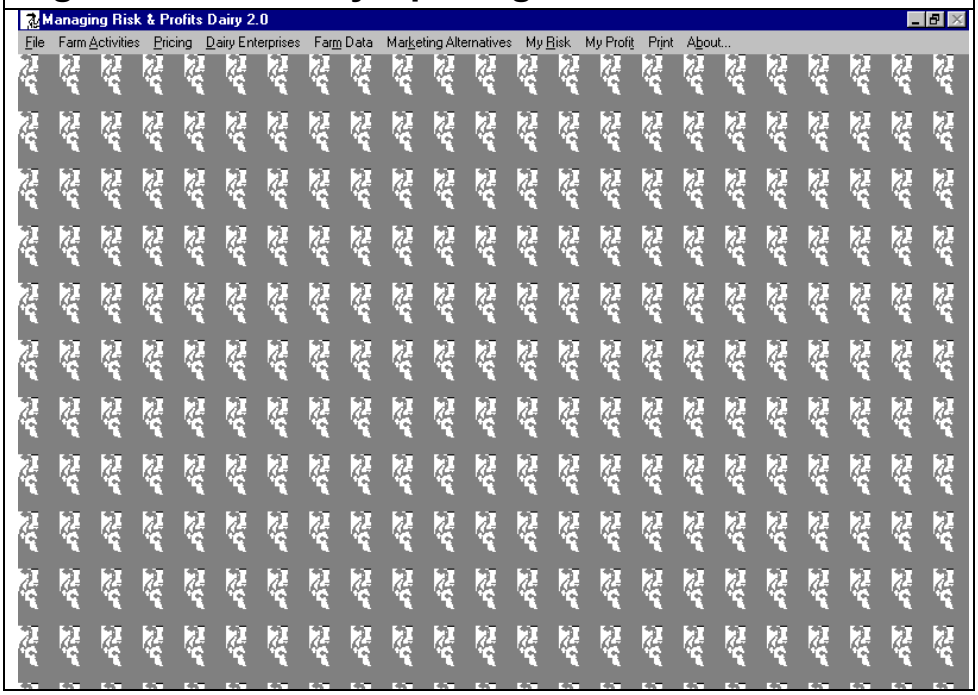
MRP / Dairy

- Main MRP / Dairy™ Screen
- Farm Activities Screen
- Saving a Farm Records Database
- Opening, Retrieving and Updating a Database
- Selecting and Maintaining Enterprises

The Main MRP / Dairy Screen

Use the mouse to click on the Managing Risks and Profits icon that appears as a shortcut on your desktop (Windows 95, 98, or 2000). The Managing Risk and Profits front page shown in **Figure 1** appears. The 2.0 in the upper left hand corner of the screen identifies the version of this program. It is possible that a different or higher version number may appear on the screen. There are six choices on the upper bar, **FILE, FARM ACTIVITIES, PRICING, DAIRY ENTERPRISES FARM DATA, MARKETING ALTERNATIVES, MY RISK, MY PROFIT, PRINT,** and **ABOUT.** Before using this program, use the mouse to click on the menu choice, **ABOUT.** In this section, the authors, the MRP educational program, and the programmer are identified. Read the **Disclaimer** statement before beginning to use the MRP/ Dairy™ software.

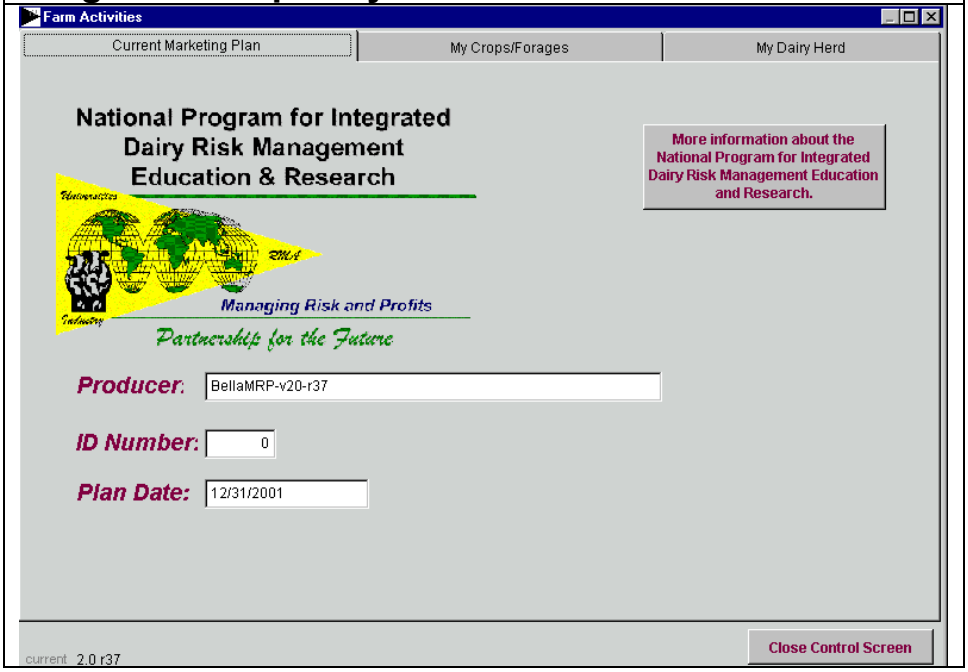
Figure 1. MRP/Dairy Opening Screen



The Farm Activities Screen

Begin working with the program by clicking on the menu choice, **FARM ACTIVITIES.** This screen as shown in **Figure 2** is used to enter the producer name or to identify the farm. Using the mouse, move the cursor to the **Producer** field.

Figure 2: MrpDairy Farm Activities Screen



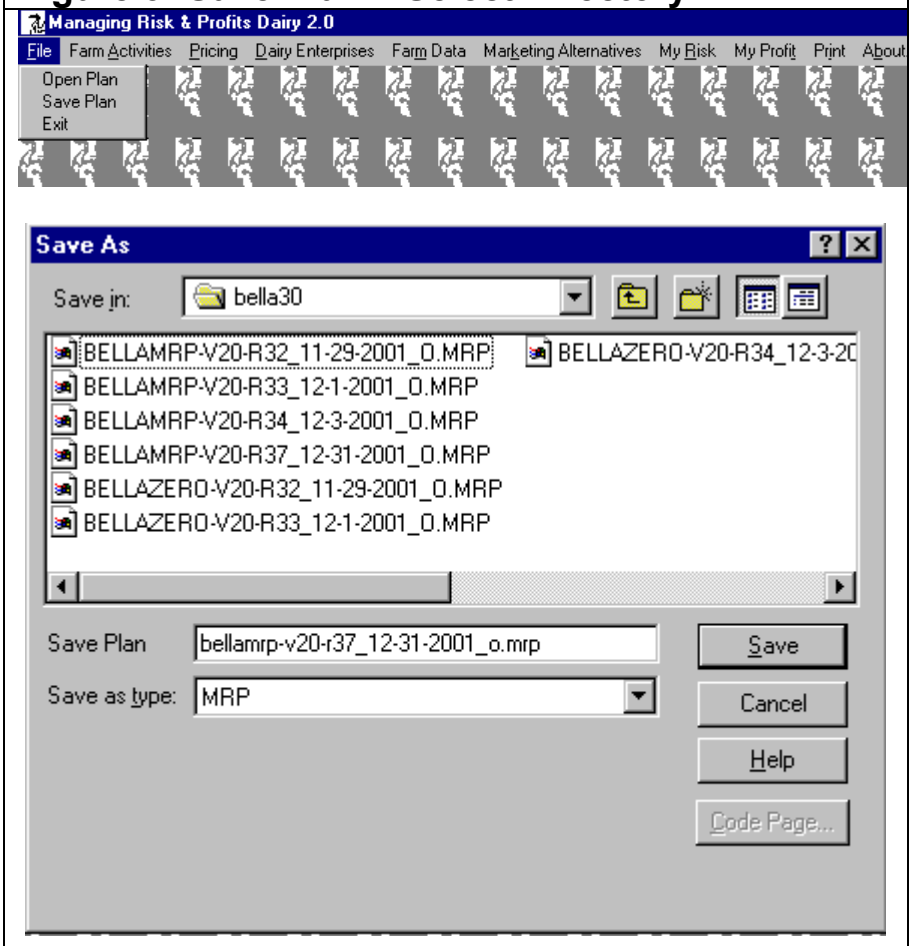
Click the Producer dialog box. The name **Bella MRP-v20-r37** has been entered. Use the Tab key on the keyboard to move to the ID Number field and then to the Date field. Hereafter, the program will assign all current data entries to this record using the ID number (0). (Note: the tab key is used on all screens to move from one field to another. To return to a prior field or to back up, press the shift key and the tab key. The backward arrow key can also be used to move backwards. Finally, one can return to a prior field by clicking the mouse on the desired field.)

Saving a Farm Records Database

As data are entered, the data are automatically stored within the program for future use. The user may exit the program with the assurance that upon re-entering the program, the prior data entries will appear in both the input and summary screens. **Three limitations exist, however. (1) If the user enters new data or revises the program, the old data is replaced by the new data and the old records are lost; (2) the user cannot access the data as stored in the program database for use in other software programs; (3) If the system were to crash, the data would be lost because it would not be backed up or stored on other sub-directories or disks.** To overcome these limitations, the program is designed to allow the user to store the data to other sub-directories or disks. This is accomplished by clicking on the **FILE** button at the top of the Windows screen and then clicking on **SAVE PLAN** as shown in **Figure 3**.

To save the **Name (BellaMRP-v20-r37), the I. D. Number (0) and the Date (12/31/2001)**, use the mouse to click on the **SAVE PLAN** button. After clicking on the **SAVE** button, a **SAVE AS** screen appears, **Figure 3**.

Figure 3: Save Plan – Select Directory



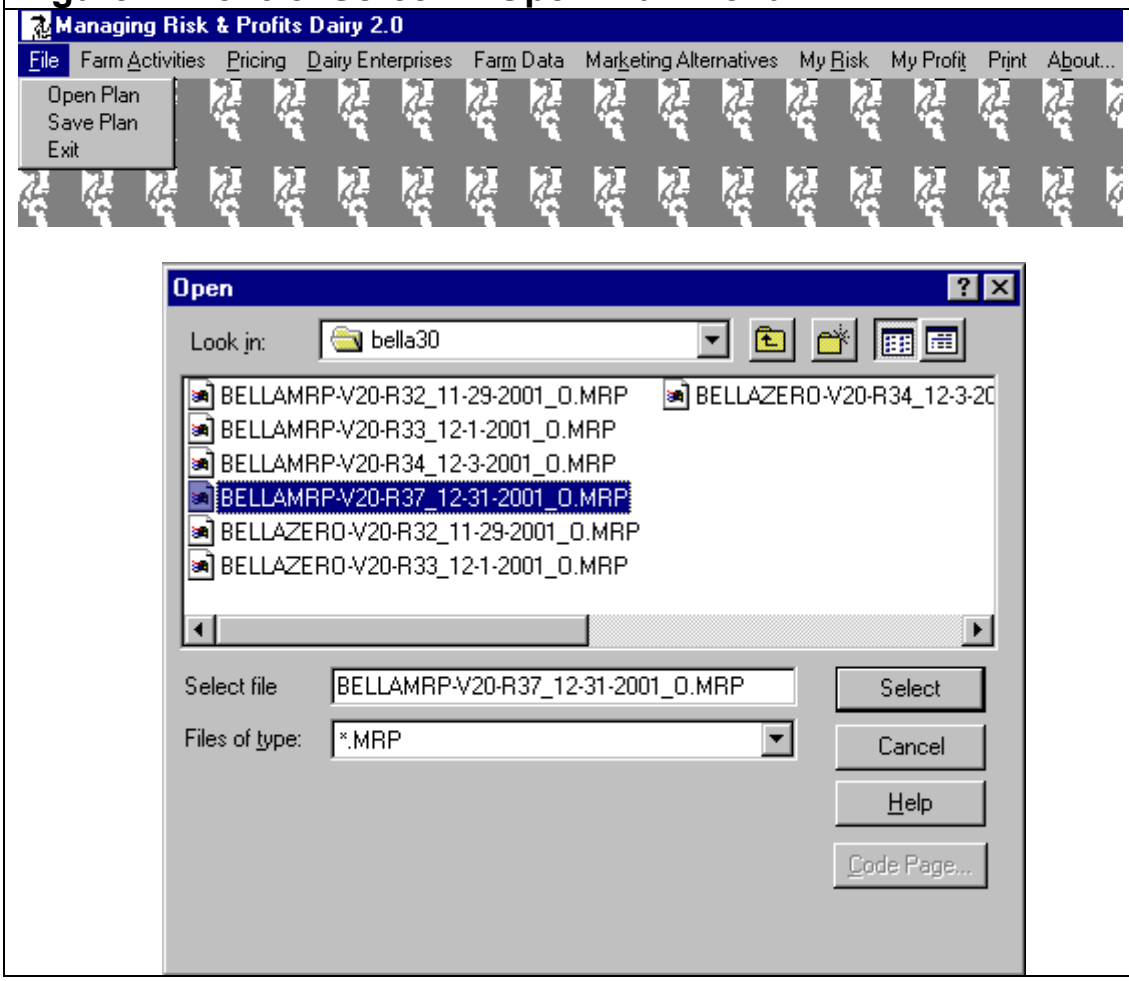
Use the mouse to identify the drive and subdirectory where the data will be stored. In this example, the data are being saved to disk drive **bella30**. By clicking on the arrow in the **Save in** box, other drive choices appear, such as A:, B:, C:, and/or/maybe D:. If a sub-directory needs to be defined or made, use the create folder button next to the **SAVE IN** dialog box (second button on right of **Save in:** box). Then select the subdirectory folder and store the data by clicking on the folder. The **CANCEL** button terminates this procedure.

- **VERY IMPORTANT:** As data are entered into the respective screens **(FARM ACTIVITIES** screen for example), return to the Windows control screen and click the **FILE** button and then **SAVE PLAN** to save the entries to prevent loss of data. If records are being maintained for more than one farm or for a group of farmers, save the data for a farm to a separate external disk or to separate subdirectories on the hard drive. **Always back up all saved files.**

Opening a Database File or Retrieving Data or Updating a Database

To open a file click the **FILE** button across the top of the control screen and then click the **OPEN PLAN** button (**Figure 4**). The **OPEN PLAN** button that appears on the screen is analogous to the **OPEN** function (open an existing document or set of files) that appears on most Windows programs. **You may use the OPEN PLAN button to retrieve your saved database files (*.mrp files).** Select the drive and subdirectory to find the data and then click on the selected plan (a particular *.mrp file). **The Producer's name, I.D. Number and the Date are again displayed on the FARM ACTIVITIES screen.**

Figure 4: Control Screen – Open Plan Menu



If data are being maintained for more than one farm, each set of farm data should be saved to a separate disk or to a separate sub-directory on the hard drive or disk. This procedure avoids confusion when opening or retrieving data. To retrieve the saved data for a specific farm, click on the open button and access the disk or subdirectory where the data are located. The **CLOSE CONTROL SCREEN** button, seen the bottom right corner in **Figure 2,** returns the user to the main menu seen in **Figure 1**.

Farm Activities Screen

Notice that you, the user, can select the type of enterprises that make up your farm business. For crop enterprises this is done by clicking on the **FARM ACTIVITIES** button on the control screen and clicking on the **My Crops/Forages** Tab (**Figure 5**). For the dairy enterprises click the **My Dairy Herd** tab (**Figure 6**). By clicking an enterprise you are setting up a complete set of data input screens necessary to completely define that particular enterprise. You will be required to provide data on your farm, field or dairy enterprise. If you do not have the required data available you should contact your accountant, financial planner or your local University Extension agent for assistance. For your first leaning experience it is recommended that you follow along, in this Guidebook, and observe how the operators of Bella Acres would complete the necessary data input screens.

Figure 5. Farm Activities (crop)

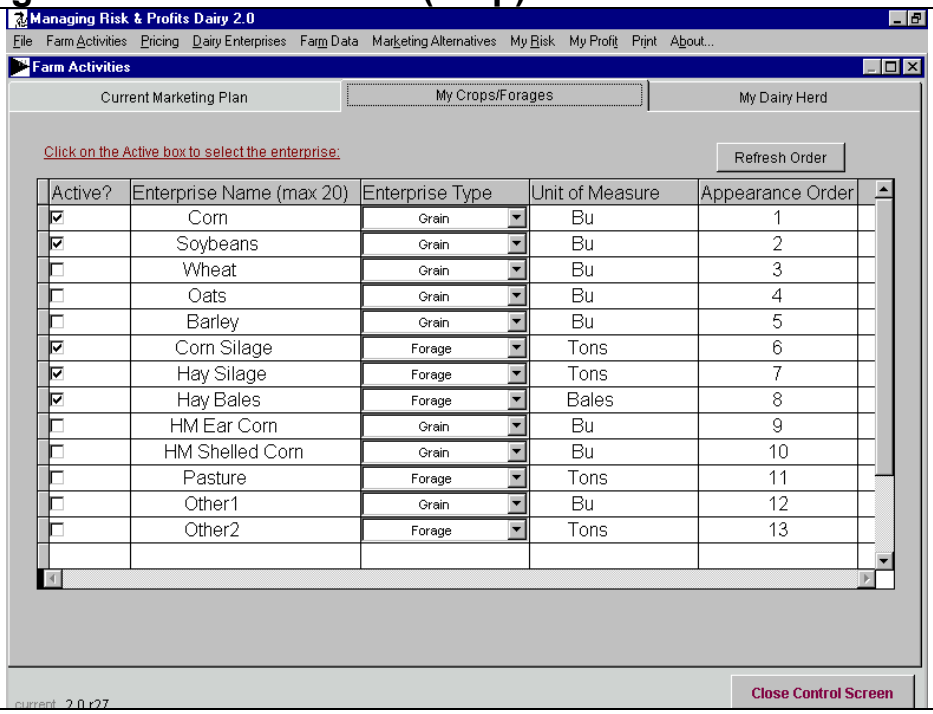

Managing Risk & Profits Dairy 2.0
File Farm Activities Pricing Dairy Enterprises Farm Data Marketing Alternatives My Risk My Profit Print About...
Farm Activities
Current Marketing Plan
My Crops/Forages
My Dairy Herd
Click on the Active box to select the enterprise:
Refresh Order
Active? Enterprise Name (max 20) Enterprise Type Unit of Measure Appearance Order
Corn Grain Bu 1
Soybeans Grain Bu 2
Wheat Grain Bu 3
Oats Grain Bu 4
Barley Grain Bu 5
Corn Silage Forage Tons 6
Hay Silage Forage Tons 7
Hay Bales Forage Bales 8
HM Ear Corn Grain Bu 9
HM Shelled Corn Grain Bu 10
Pasture Forage Tons 11
Other1 Grain Bu 12
Other2 Forage Tons 13
Close Control Screen

Figure 6. Farm Activities (dairy)

Managing Risk & Profits Dairy 2.0
File Farm Activities Pricing Dairy Enterprises Farm Data Marketing Alternatives My Risk My Profit Print About...
Farm Activities
Current Marketing Plan
My Crops/Forages
My Dairy Herd
Calculate
Close Control Screen
current 2.0 r27

Name of Group	No. of Cows	Milk Output per Cow	Group Details
High Producers	41	80.00	Freestall #1
Medium Producers	0	0.00	Freestall #2
Low Producers	44	60.00	Freestall #3
Dry Cows	10	0.00	Dry Cow Barn A
PreFresh Cows	5	0.00	PreFresh Cow Barn B
Other Group 1	0	0.00	Your Other Group 1
Other Group 2	0	0.00	Your Other Group 2
Other Group 3	0	0.00	Your Other Group 3
Dairy Beef A	0	0.00	Dairy Beef Pen A
Dairy Beef B	0	0.00	Dairy Beef Pen B
Dairy Beef C	0	0.00	Dairy Beef Pen C
0 to Wean	9	1.50	Calves Pen A
Wean to 6m	8	1.85	Wean to 6 Months Pen B
6m to 12m	14	1.72	6m to 12m Pen C

A distinguishing feature of the MRP/Dairy™ approach lies in the requirement that the producer identify all farm related economic activity as separate enterprises. Each enterprise will be treated for marketing purposes as having its own cost, revenue and profit structure.

The MRP/Dairy™ program allows a user to select different enterprises. The **My Dairy Herd** screen allows a user to enter data for these livestock enterprises: Dairy Cow, Dairy Heifer, and Dairy Beef. The user enters the Dairy Herd Structure: Number of cows identified by production level and the Production Level: Average pounds of milk produced per cow per day.

The user selects the crop enterprises in the **My Crops/Forages** screen. The following crop enterprises can be selected: Grains: Corn – Soybean – Wheat – Oats – Barley – HM Ear Corn – HM Shell Corn; Forages: Corn Silage – Hay Silage – Hay Bales – Pasture; User supplied enterprises: Other 1 and Other 2. From the **My Crops/Forages** screen you can see that Bella Acres Dairy grows corn, soybeans, corn silage, hay silage, and hale bales. The mouse is used to click on each of these crops. Selecting or deselecting a given enterprise includes input and output screens for that enterprise in the MRP/Dairy™ program. Selecting an enterprise also sets up the MRP/Dairy™ program to calculate the relevant information to be displayed on the **FARM DATA** screens.

IMPORTANT: As you SELECT an enterprise and enter the FARM DATA for that enterprise, the appropriate summary calculations are made by the MRP / Dairy™ program and simultaneously transferred to the FARM DATA screens. If you DESELECT an enterprise THE FARM DATA CALCULCATONS WILL ALSO BE SIMULTANEOUSLY DESELECTED. If you wish to restore an enterprise you MUST OPEN AND CLOSE EACH OF THE FARM DATA SCREENS applicable for that enterprise to restore the appropriate FARM DATA items. Failure to complete this sequence will result in INCOMPLETE FARM DATA INFORMATION!

Farm Activity Data - Building your farm enterprise database.

Farm enterprise data is entered either on the **DAIRY ENTERPRISES** screens or the **FARM DATA** screens. In the **DAIRY ENTERPRISES** screens the input data can be entered for **DAIRY COW**, **DAIRY HEIFER**, and **DAIRY BEEF** enterprises. For each of these dairy enterprises, grown and purchased feed requirements are entered. Crop enterprise data is entered in the **FARM DATA** screens. This set of input screens is used to enter new grain crop data, new forage crop data, grain assets (grain that is in storage), as well as general expenses, marketing alternatives, insurance products, and miscellaneous financial records.

The **DAIRY ENTERPRISES** pull down menu will show:

- **DAIRY COW**
- **DAIRY HEIFER**
- **DAIRY BEEF**

The **FARM DATA** pull down menu will show:

- **GRAIN CROP**
- **FORAGE CROP**
- **GRAIN ASSETS**
- **EXPENSES**
- **MARKETING ALTERNATIVES**
- **INSURANCE PRODUCTS**
- **MISCELLANEOUS**

In the following sections of this manual each of these menu items will be discussed in turn. Begin by using the mouse to click on **DAIRY ENTERPRISES**.

DAIRY ENTERPRISES

The **DAIRY ENTERPRISES** button is where the support data for the dairy livestock activities are reported. When this button is clicked three different dairy enterprise selections are shown. These are **DAIRY COW**, **DAIRY HEIFERS**, and **DAIRY BEEF**.

The operators of Bella Acres Dairy have two dairy enterprises:

1. **DAIRY COW** (the lactating herd),
2. **DAIRY HEIFERS** (female calves raised as lactating cow replacements).

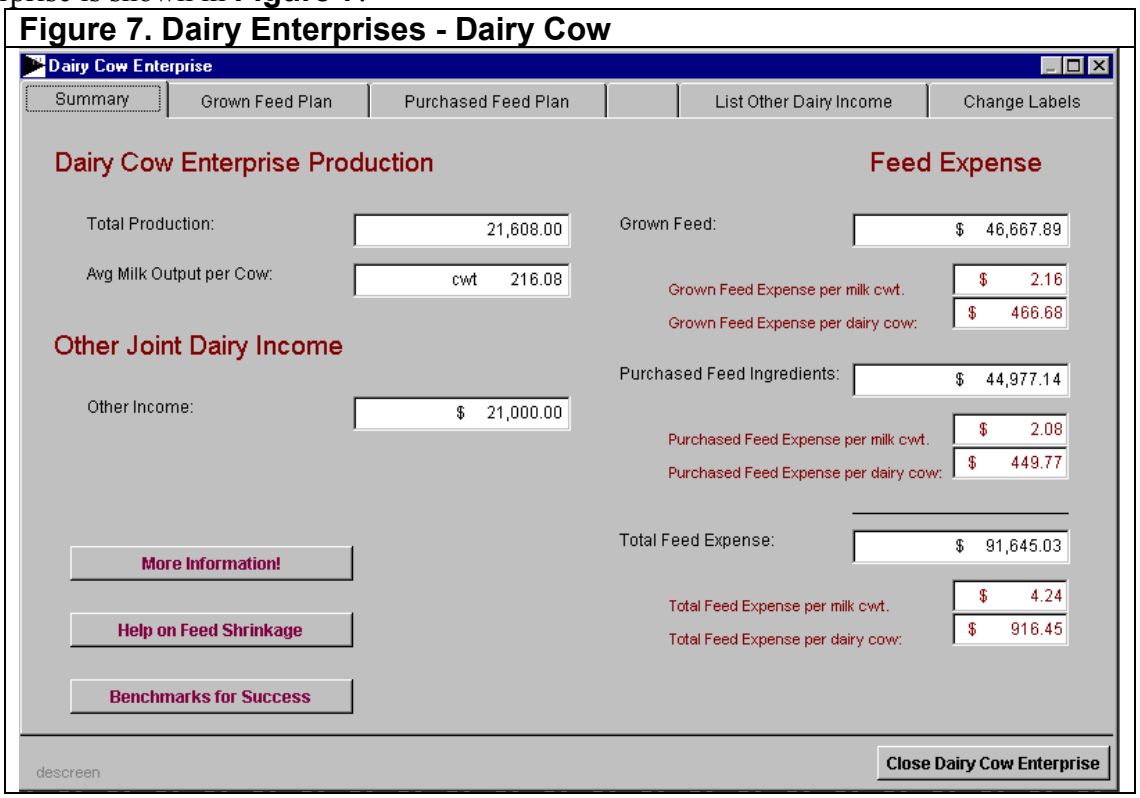
Input data required for the **DAIRY ENTERPRISES** section of MRP/Dairy™ includes the following information: Grown Feed Requirements, Purchased Feed Requirements, and Other Dairy Income. In addition to this support data, the **DAIRY HEIFER** input screen will require knowledge of the following information: Average age at 1st calving and Death loss (%)

Each of the **DAIRY ENTERPRISES** screens will be reviewed in detail. It is important to understand the logic of the information entered in this section of the MRP/Dairy™ program. The **DAIRY ENTERPRISES** screens determine the amount and expense of grown and purchased feed required by each specific livestock enterprise, the joint-product income generated by the enterprise (income from cull cows for example), the number of heifers finished per year and the number of heifers and/or dairy beef available for sale off the farm.

DAIRY COW ENTERPRISE

Support data for the **DAIRY COW** enterprise is entered using the **DAIRY ENTERPRISES** menu located on the MRP/Dairy™ main menu. The opening screen for the **DAIRY COW** enterprise is shown in **Figure 7**.

Figure 7. Dairy Enterprises - Dairy Cow



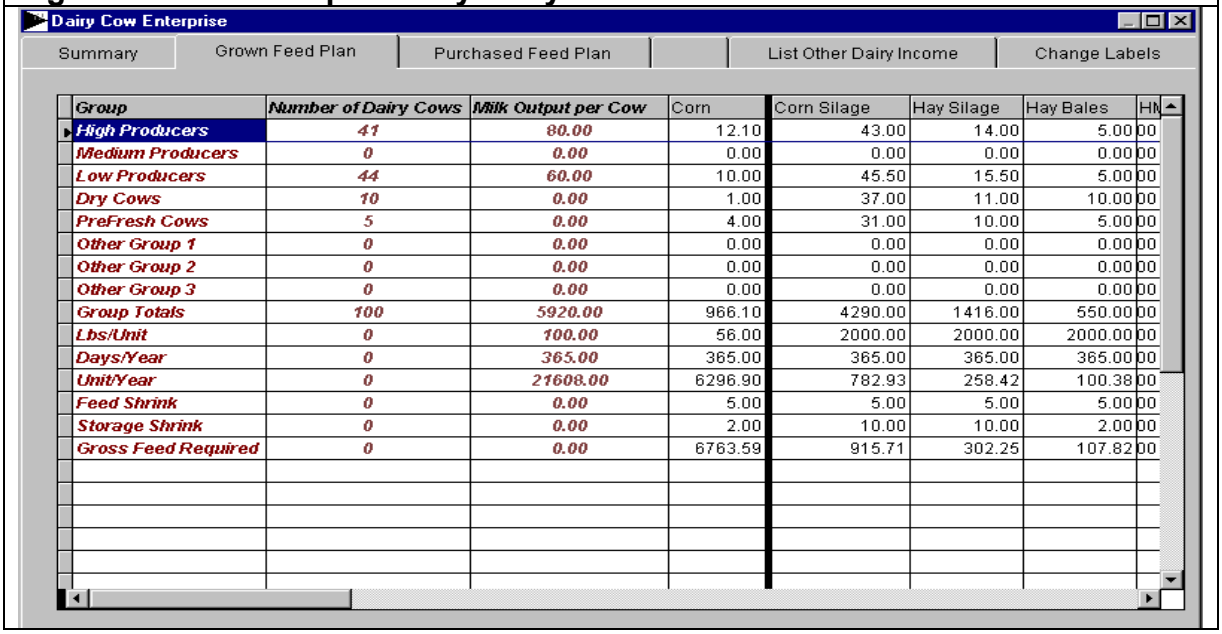
The **DAIRY COW ENTERPRISE** screen has five Tab buttons: **SUMMARY**, **GROWN FEED PLAN**, **PURCHASED FEED PLAN**, **LIST OTHER DAIRY INCOME**, and **CHANGE LABELS**. The Tab labeled **GROWN FEED** opens a worksheet that is used to report on the following items:

- Dairy Herd Structure: Number of cows identified by production level
- Production Level: Average pounds of milk produced per cow per day
- Feed Intake Level: Pounds of feed (by type) intake per animal per day
- Price of Feed: Price of feed per unit (bushels, tons, pounds)

GROWN FEED PLAN WORKSHEET

The **GROWN FEED PLAN** worksheet accompanying the **DAIRY COW** menu is shown in **Figure 8** and will be reviewed in detail. You may either enter the data into the worksheet or review the Bella Acres Dairy case farm material at the beginning of this manual. **NOTE:** The operation of the **GROWN FEED PLAN** and **PURCHASED FEED PLAN** menus and worksheets are similar for all three of the available livestock enterprises: Dairy Cow, Dairy Heifer, and Dairy Beef. The use of these menus and their respective worksheets will be explained in detail for the Dairy Cow enterprise. This information is transferable to the other livestock enterprises. Where there are important differences in input data, these will be covered in a separate section.

Figure 8. Grown Crops use by Dairy Cows



Group	Number of Dairy Cows	Milk Output per Cow	Corn	Corn Silage	Hay Silage	Hay Bales	HM
High Producers	41	80.00	12.10	43.00	14.00	5.00	00
Medium Producers	0	0.00	0.00	0.00	0.00	0.00	00
Low Producers	44	60.00	10.00	45.50	15.50	5.00	00
Dry Cows	10	0.00	1.00	37.00	11.00	10.00	00
PreFresh Cows	5	0.00	4.00	31.00	10.00	5.00	00
Other Group 1	0	0.00	0.00	0.00	0.00	0.00	00
Other Group 2	0	0.00	0.00	0.00	0.00	0.00	00
Other Group 3	0	0.00	0.00	0.00	0.00	0.00	00
Group Totals	100	5920.00	966.10	4290.00	1416.00	550.00	00
Lbs/Unit	0	100.00	56.00	2000.00	2000.00	2000.00	00
Days/Year	0	365.00	365.00	365.00	365.00	365.00	00
Unit/Year	0	21608.00	6296.90	782.93	258.42	100.38	00
Feed Shrink	0	0.00	5.00	5.00	5.00	5.00	00
Storage Shrink	0	0.00	2.00	10.00	10.00	2.00	00
Gross Feed Required	0	0.00	6763.59	915.71	302.25	107.82	00

The **GROWN FEED PLAN** worksheet contains a substantial amount of information and must be thoroughly understood by the user of MRP/Dairy™ software program. First, a review of the worksheet layout is in order. The worksheet is arranged in ROWS and COLUMNS. The rows contain the information for each group of animals in the milking herd and for the feed intake requirements for an animal in each group.

NOTE: Most of the **ROW** labels, such as High, Medium, and Low etc. can be altered by the user simply by highlighting the worksheet cell and typing in a new label. Reminder: Once you have changed a label the program will continue to use that label from that point on. The user should not alter some labels in the ROWS. These are the labels beginning with **GroupTotals** and progressing through **Gross Feed Required.**

The **COLUMN** heading labels can be altered by the user to fit the particular feeding program. To alter these labels (or any of the **COLUMN** labels in these worksheets) select the **CHANGE LABELS** Tab on the **DAIRY ENTERPRISES** screen. This will open a label's worksheet where the user can type in any labels for the column headings that are desired. After completing the new labels, the user will click on the **GROWN FEED PLAN** Tab on the keyboard and the new labels will be registered in the worksheets.

The columns in the feed worksheet contain the following information. The first column **Number of Dairy Cows** is used to record the number of animals in each group. The second column **Milk Output per Cow** is used to record the expected average production per day per animal for each group. The third column through the end of the worksheet contains the grown feed ingredient sources.

Dairy Cow Enterprise: Bella Acres Dairy has the following milk herd structure: 41 lactating cows in the High Producers group producing an average of 80 pounds of milk per day; 0 cows in the Medium Producers group, 44 lactating cows in the Low Producers group producing an average of 60 pounds of milk per cow per day, 10 Dry cows and 5 Prefresh cows. The entire lactating cow enterprise is thus made up of 100 cows producing and expected 5,920 pounds of milk per day.

> **Group Total [calculated]:** Following down the column headed Milk Output per Cow to the row labeled Group Totals you will see the value 5,920. This is calculated by the MRP/Dairy™ program based on the information supplied by the user for number of animals and average production per animal.
>
> **Lbs/Unit [user entry]:** The next row entry below Group Totals is Lbs/Unit. This is where the user enters the appropriate conversion factor for the milk or feed type. For example, in the column headed Milk Output per Cow the output is milk in pounds and we will want to work with milk output in hundredweight (cwt) as this is the unit that receives the price. In this case, the proper Lbs/Unit entry will be 100 to indicate that the pounds per day are to be converted to hundredweights.

Days/Year [user entry]: The next row label in the first column following Lbs/Unit is Days/Year. This is the row in which the user enters the number of days per year that the milk is produced or the feed input is required. In the example of milk produced, the entry here is 365 indicating that the operators of Bella Acres Dairy expect to produce 59.2 hundredweight of milk per day for 365 days.

Units/Year [calculated]: The entries in this row are calculated by the program. For milk output this calculation is the number of hundredweight per day multiplied by the number of days per year entered by the user. For Bella Acres Dairy this calculation shows an expected milk production level of 21,608 cwt. For feed input this entry will be the total feed required per day converted from pounds to the appropriate units (bushel or tons) multiplied by the total days fed to arrive at a total feed requirement. NOTE: This total feed requirement does not include loss due to either feed shrink or storage shrink.

Feed Shrink [user entry]: The next row label is Feed Shrink. Here the user must enter the percent of the feed, by type, that is lost during the feeding process. NOTE: The percent is entered as the whole percent, e.g., five percent feed shrink is entered as 5.0 and NOT 0.05. In the case farm, the operators of Bella Acres Dairy anticipate a 5 percent feed shrink for both the corn grain feed and the forages.

Storage Shrink [user entry]: The next row label is Storage Shrink. This row records the user's best information as to the amount, specified as a percent, of each feed type that is lost in storage. This amount is due to physical loss and not to shrink due to moisture reduction which is recorded in the **GRAIN ASSETS** menu and not here. This loss represents the amount of feed that comes out of he field and goes into storage but does not come out of storage and go to the feed bunk or alley.

Gross Feed Required [calculated]: The final row in the worksheet is the Gross Feed Required label. The entries in this row are calculated by the program. These entries show the gross feed required by feed type after both feed shrink and storage shrink are accounted for in the calculations. For example, on the Bella Acres Dairy operation, the amount of shelled corn required to meet the feed intake needs of the dairy cow herd is 6,296.90 bushels BEFORE SHRINKAGE LOSS. After adjusting for a storage and feeding loss of 2 and 5 percent, respectively, the Gross Feed Requirement is 6,763.59 bushels of corn grain.

Gross Feed Required is an important calculation for the following reason. Bella Acres Dairy has an anticipated ***new crop*** corn grain production of 16,800 bushels as determined from the **GRAIN CROP** menu. The **Dairy Cow** enterprise requires an anticipated 6,763 bushels to feed to the dairy cowherd. This grown feed requirement will come out of next year's anticipated production. This leaves 10,037 bushels of corn grain to either be used to feed additional livestock enterprises on the farm, such as the heifer enterprise, or to be sold or marketed in the

grain market. It is important for the user to recognize that this represents an anticipated forward sale of shell corn to the dairy enterprise.

Looking at the other feed input entries in the **Gross Feed Requirement** row we can see that the operators of Bella Acres Dairy will require 916 tons of Corn Silage, 302 tons of Hay Silage, and 108 tons of Hay Bales to complete the **GROWN FEEDS** requirement of the **DAIRY COW** enterprise. If the farm produces enough of these crops to meet this feed requirement then the surplus will be added to that available to be sold. If the farm does not produce enough to meet this feed requirement then the deficit amount will have to be purchased as a purchased feed ingredient.

After the **GROWN FEED PLAN** in the Dairy Cow Enterprise is completed, the user can update the calculated entries at any time by pressing the **SUMMARY** Tab of the Dairy Cow Enterprise. After all entries are entered and verified for accuracy, pressing the **Close Dairy Cow Enterprise** key on the keyboard will update all calculations and exit back to the main Windows control screen.

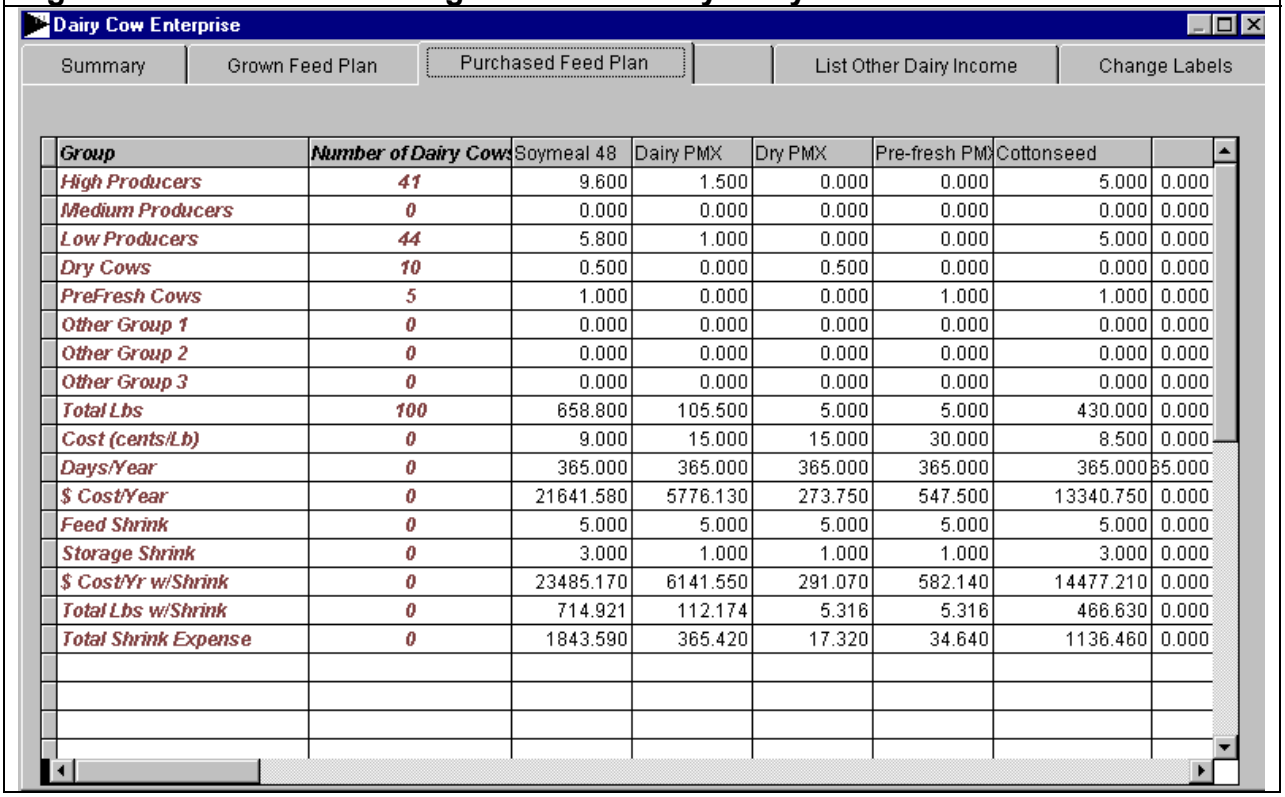
At this point, if the user has entered market prices for the grown feed crops using the **PRICING/EXPECTED PRICES** menu, the MRP/Dairy™ software will multiply each of the grown feeds required to calculate the market value of each and then sum these to arrive at the Feed Expense: Grown Feed and display this on the **DAIRY COW ENTERPRISE** screen. Dairy producers who are purchasing a significant quantity of feedstuffs will face the risk of increasing prices over the planning period. To offset this price risk, the producer can adopt a number of market-based strategies. These include cash purchase and on-farm storage, cash forward contracts, futures contracts, and options contracts. The user of MRP / Dairy™ should consult the paper Basic Strategies for Managing Feed Prices by Kevin McNew and Chris Wolf for a discussion of this topic. This paper can be accessed from the CD-ROM version of MRP / Dairy™ by selecting the Risk Management Papers section.

For Bella Acres Dairy this calculation shows this feed expense to be $46,667.89. With 100 cows in the Dairy Cow enterprise, this amounts to $466.67 per cow or with an expected milk production of 21,608 cwt. grown feed expense will be $2.16 per cwt. of milk produced.

PURCHASED FEED PLAN

The **PURCHASE FEED PLAN** worksheet accompanying the **DAIRY COW ENTERPRISE** menu is shown in **Figure 9** and will be reviewed in detail. You may either enter the data into the worksheet or review the Bella Acres Dairy case farm material at the beginning of this manual.

Figure 9. Purchased Feed Ingredients used by Dairy Cows



Group	Number of Dairy Cows	Soymeal 48	Dairy PMX	Dry PMX	Pre-fresh PMX	Cottonseed	
High Producers	41	9.600	1.500	0.000	0.000	5.000	0.000
Medium Producers	0	0.000	0.000	0.000	0.000	0.000	0.000
Low Producers	44	5.800	1.000	0.000	0.000	5.000	0.000
Dry Cows	10	0.500	0.000	0.500	0.000	0.000	0.000
PreFresh Cows	5	1.000	0.000	0.000	1.000	1.000	0.000
Other Group 1	0	0.000	0.000	0.000	0.000	0.000	0.000
Other Group 2	0	0.000	0.000	0.000	0.000	0.000	0.000
Other Group 3	0	0.000	0.000	0.000	0.000	0.000	0.000
Total Lbs	100	658.800	105.500	5.000	5.000	430.000	0.000
Cost (cents/Lb)	0	9.000	15.000	15.000	30.000	8.500	0.000
Days/Year	0	365.000	365.000	365.000	365.000	365.000	55.000
$ Cost/Year	0	21641.580	5776.130	273.750	547.500	13340.750	0.000
Feed Shrink	0	5.000	5.000	5.000	5.000	5.000	0.000
Storage Shrink	0	3.000	1.000	1.000	1.000	3.000	0.000
$ Cost/Yr w/Shrink	0	23485.170	6141.550	291.070	582.140	14477.210	0.000
Total Lbs w/Shrink	0	714.921	112.174	5.316	5.316	466.630	0.000
Total Shrink Expense	0	1843.590	365.420	17.320	34.640	1136.460	0.000

The dairy cow **PURCHASE FEED PLAN** worksheet contains a substantial amount of information and must be thoroughly understood by the user of MRP/Dairy™ software program. First, a review of the worksheet layout is in order. The worksheet is arranged **VERY MUCH AS IS THE GROWN FEED** worksheet explained in the last section. The worksheet is laid out in **ROWS** and **COLUMNS**. The rows contain the information for each group of animals in the milking herd and for the feed intake requirements for an animal in each group.

The enterprise layout in this worksheet must match the layout in the **GROWN FEED PLAN** worksheet. While this worksheet is very similar to the **GROWN FEED PLAN** worksheet, there are a couple of important differences to be aware of. First, prices used to value grain and forages in the **GROWN FEED PLAN** worksheet are entered into the MRP/Dairy™ program through the **EXPECTED PRICES** menu while in the dairy cow **PURCHASED FEED PLAN** worksheet prices for each purchased ingredient are entered directly into the worksheet.

Second, the dairy cow **PURCHASED FEED PLAN** worksheet calculates the total cost of the purchased feed ingredient directly. Third, the dairy cow **PURCHASED FEED PLAN** worksheet calculates the amount of purchased feed ingredients required for the livestock enterprise and the cost to the producer associated with feeding and storage shrinkage.

Finally, as with the **GROWN FEED PLAN** worksheet, the total cost of all purchased feed ingredients is transferred back to the dairy cow **SUMMARY** screen and to other appropriate **SUMMARY DATA** screens.

NOTE: Most of **ROW** labels, such as High, Medium, Low, etc. can be altered by the user simply by highlighting the worksheet cell and typing in a new label. **REMINDER**: Once you have changed a label the program will continue to use that label from that point on. Some labels in the ROWS should not be altered by the user. These are the labels beginning with **Total Lbs.** and progressing through **Total Shrink Expense.**

The **COLUMN** labels for the purchased feed ingredients can be altered by the user to fit the particular feeding program. To alter these labels (or any of the **COLUMN** labels in these worksheets) select the **CHANGE LABELS** Tab on the **DAIRY COW ENTERPRISE** screen. This will open a labels worksheet where the use can type in any labels for the column heading that are desired. After completing the new labels, the user will press the **PURCHASED FEED PLAN** Tab on the keyboard and the new labels will be registered in the worksheets.

The columns in the **PURCHASED FEED PLAN** worksheet contain the following information. The first column **Number of Dairy Cows** is used to record the number of animals in each group. The second column through the last column of the worksheet contains the purchased ingredient sources.

Dairy Cow Enterprise: Bella Acres Dairy has the following milk herd structure: 41 lactating cows in the High Producers group, 0 cows in the Medium Producers group; 44 lactating cows in the Low Producers group, 10 Dry cows and 5 Prefresh cows. The entire lactating cow enterprise is thus made up of 100 cows.

Total Lbs. [calculated]: Following down the column headed **Soybean Meal 48** to the row labeled Total Lbs. you will see the value 658.8. This is calculated by the MRP/Dairy™ program based on the information supplied by the user for number of animals and average purchased ingredient, in this case soybean meal 48% protein, feed per animal.

Cost(cents/Lb) [user entry]: The next row entry below Total Lbs. is Cost(Cents/Lb). This is where the user enters the appropriate expected price per pound for the purchased ingredient type. This price will reflect either the actual price paid if the feed has already been purchased or priced on a forward contract or the expected average price taking into account all forward priced feed and any futures or options positions taken on short feed positions. For example, in the column headed **Soybean Meal 48** the total feeding rate is 658.8 pounds and the expected average cost per pound is 9 cents. This price is what the producer expects to pay on average for each pound of **Soybean Meal 48** over the production period. The user will enter the cost per pound for each of the purchased feed ingredients in the cells in this row.

Days/Year [user entry]: The next row label in the first column following Cost(Cents/Lb) is Days/Year. This is the row in which the user enters the number of days per year that the feed input is required. In the example of purchased **Soybean Meal 48**, the entry here is 365 indicating that the operators of Bella Acres Dairy expect to produce feed this ingredient 365 days - the production year.

$Cost/Year [calculated]: The entries in this row are calculated by the program. For each of the purchased feed ingredients the output of this calculation is the total cost of the purchased feed ingredient over the specified number of days. NOTE: This total purchased ingredient cost does not include loss due to either feed shrink or storage shrink.

Feed Shrink [user entry]: The next row label is Feed Shrink. Here the user must enter the percent of the purchased ingredient, by type, that is lost during the feeding process. NOTE: The percent is entered as the whole percent, e.g., five percent feed shrink is entered as 5.0 and NOT 0.05. In the case farm, the operators of Bella Acres Dairy anticipate a 5 percent feed shrink for the purchased ingredient **Soybean Meal 48.** A review of the other entries in this row indicates the anticipated feed shrink by type of purchased ingredient.

Storage Shrink [user entry]: The next row label is Storage Shrink. This row records the user's best information as to the amount, specified as a percent, of each purchased ingredient feed type that is lost in storage. This amount is due to physical loss. This loss represents the difference between the amount of purchased ingredient bought and stored and the amount that actually goes to the feed bunk or alley.

$Cost/Yr w/Shrink [calculated]: The next row in the worksheet is the **$Cost/Yr w/Shrink** label. Entries on this row are calculated by the program. These entries show the total cost, by each purchased ingredient, including feed and storage shrinkage. Gross expense after both feed shrink and storage shrink are accounted for in the calculations. For example, on the Bella Acres Dairy operation, the cost of the purchased ingredient Soybean Meal 48 including shrink expense is $23,485.

Total Lbs w/Shrink [calculated]: The next row in the worksheet is the Total Lbs. w/ Shrink and this shows the total amount of the purchased ingredient that is required to meet the ration requirements for the livestock enterprise. For Bella Acres Dairy and the purchased ingredient Soybean Meal 48 this amounts to 714.92 pounds.

Cost of Shrink [calculated]: The final row in the worksheet shows the calculated dollar cost of shrink to the livestock enterprise. The MRP/Dairy™ program calculates this for the user because controlling the added costs due to product loss in either storage and/or feeding can have an important impact on the overall cost of feeding livestock For the operators of Bella Acres Dairy, the dollar cost of storage and feeding loss for Soybean Meal 48 is $1,843.59. This adds $18.43 to the feed cost per cow in the **DAIRY COW** enterprise.

After the dairy cow **PURCHASED FEED PLAN** worksheet is completed, the user can update the calculated entries at any time by pressing the dairy cow **SUMMARY** Tab on the keyboard or by pressing the **Close Dairy Cow Enterprise** button.

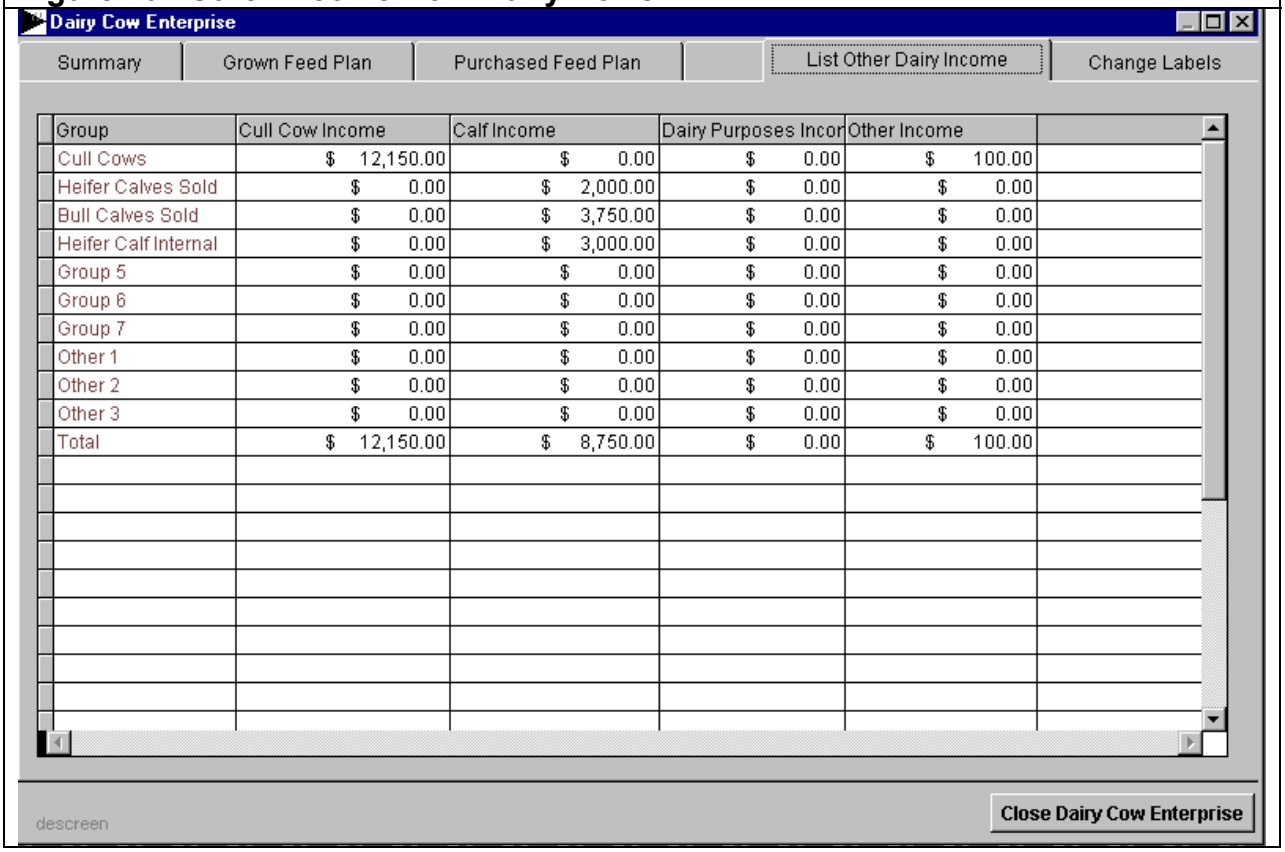
At this point the MRP/Dairy™ software will sum each of the each of the purchased ingredient total annual cost to arrive at the Feed Expense: Purchased Ingredients and display this on the **DAIRY COW ENTERPRISE** screen. For Bella Acres Dairy this calculation shows this purchased ingredient expense to be $44,977.14. With 100 cows in the Dairy Cow enterprise, this amounts to $449.77 per cow or with and expected milk production of 21,608 cwt. purchased ingredient expense will be $2.08 per cwt. of milk produced.

A final point about the calculated Feed Expense: Purchased Ingredient of $44,977.14: this dollar amount is automatically transferred to the appropriate entries on the Summary Data screens that will be discussed in detail later in this manual.

After both the **GROWN FEED PLAN** and **PURCHASED FEED PLAN** worksheets have been completed and verified for accuracy the user will return to the **DAIRY COW ENTERPRISE** screen. On that screen, on the lower right panel, both the grown feed and purchased feed ingredient total expenses are summed and the total displayed. For the Bella Acres Dairy case farm this total is $91,645.03. The cost per hundredweight of anticipated milk production is $4.24 per hundredweight. With 100 cows this expense is $916.45 per cow.

Returning to the **DAIRY COW ENTERPRISE** screen, the user will find an active Tab button on the left-hand side of the menu with the label: **LIST OTHER DAIRY INCOME**. Selecting this button by clicking on it will open a worksheet for the user. This worksheet is where the user can enter additional income derived from the dairy cow enterprise. The worksheet is shown in **Figure 10**.

Figure 10. Other Income from Dairy Cows



Group	Cull Cow Income	Calf Income	Dairy Purposes Incor	Other Income
Cull Cows	$ 12,150.00	$ 0.00	$ 0.00	$ 100.00
Heifer Calves Sold	$ 0.00	$ 2,000.00	$ 0.00	$ 0.00
Bull Calves Sold	$ 0.00	$ 3,750.00	$ 0.00	$ 0.00
Heifer Calf Internal	$ 0.00	$ 3,000.00	$ 0.00	$ 0.00
Group 5	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Group 6	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Group 7	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Other 1	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Other 2	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Other 3	$ 0.00	$ 0.00	$ 0.00	$ 0.00
Total	$ 12,150.00	$ 8,750.00	$ 0.00	$ 100.00

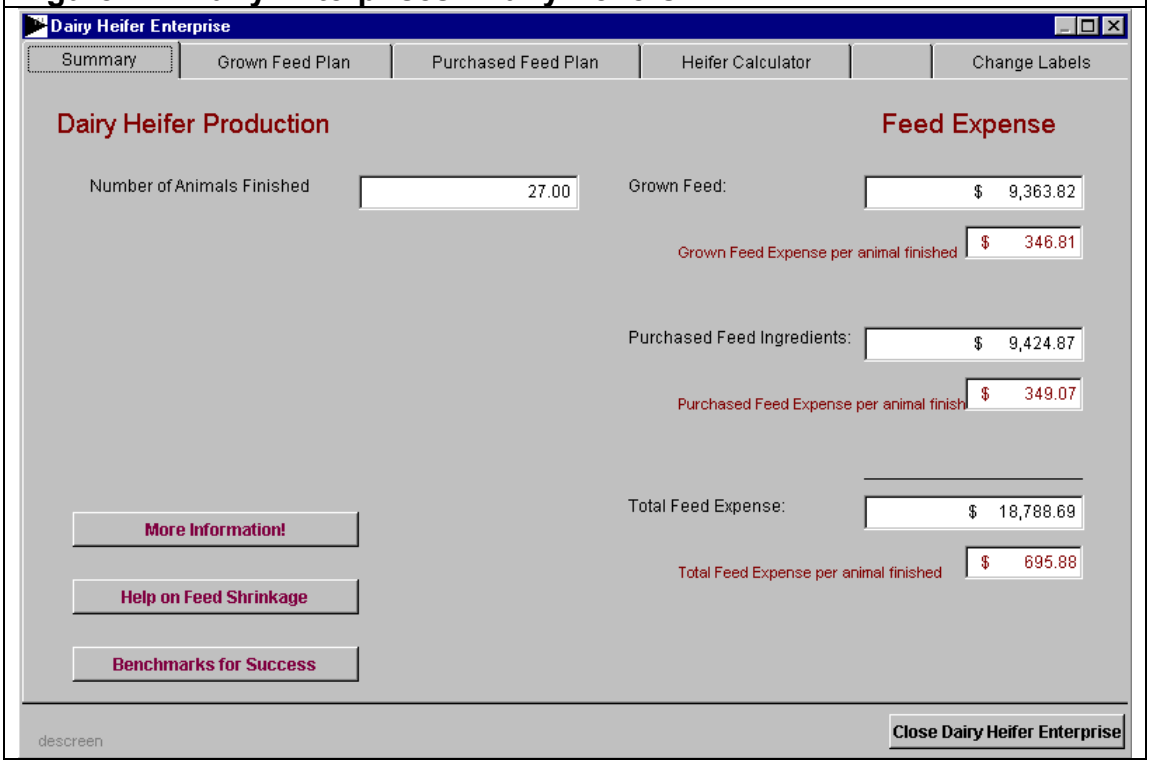
Activating this worksheet for Bella Acres Dairy shows the following information. First, the operators of Bella Acres Dairy have reported cull cow income of $12,150.00 plus $100 in additional income from the culling activity. Excess heifer calves will be sold for a gross income of $2000. Bull calves will be sold for an expected income of $3,750. Income derived from the sale of heifer calves to the heifer operation will generate another $3,000. Total income by source is shown at the bottom of the worksheet. Total by-product income generated by the **DAIRY COW ENTERPRISE** is $21,000.00. Income entered into this worksheet will be used later in the program as an offset to the cash cost of producing milk. Using the **SUMMARY** Tab will recalculate the totals for each column and will return the user to the **DAIRY COW ENTERPRISE** screen.

Cull Cows	**27 x $450**	**$12,150**
Heifer Calves (off-farm)	**20 x $100**	**$ 2,000**
Heifer Calves (on-farm)	**30 x $100**	**$ 3,000**
Bull Calves	**50 x $ 75**	**$ 3,750**

DAIRY HEIFER ENTERPRISE

To enter dairy heifer data click on the **DAIRY ENTERPRISES** button and click the **DAIRY HEIFER ENTERPRISE** button. The user then sees the **DAIRY HEIFER ENTERPRISE** database (**Figure 11**).

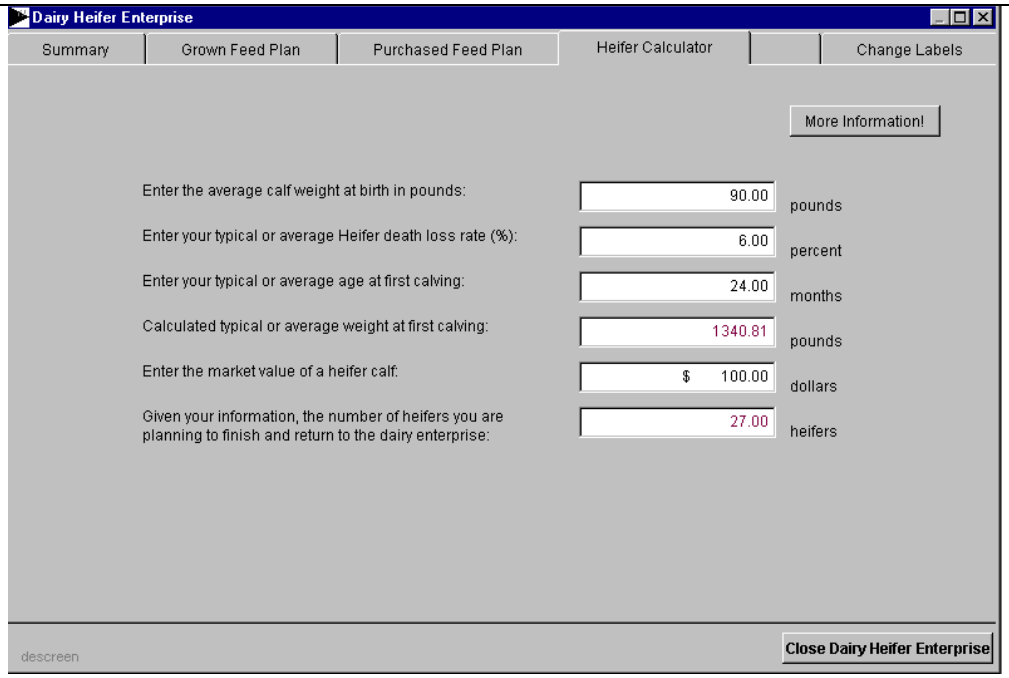
Figure 11. Dairy Enterprises - Dairy Heifers



This screen is the beginning from which the user will enter all of the required supporting data for the **DAIRY HEIFER ENTERPRISE**. The result of the calculations made from this screen will be used to calculate the total economic cost of producing one dairy heifer. The **DAIRY HEIFER ENTERPRISE** screen has five Tab buttons: **SUMMARY**, **GROWN FEED PLAN**, **PURCHASED FEED PLAN**, **HEIFER CALCULATOR** , and **CHANGE LABELS**.

The **HEIFER CALCULATOR** Tab is used to access a automated calculator which is used to determine the expected number of freshening heifers that will be available for sale either back to the dairy or to another buyer. First, select the **HEIFER CALCULATOR** Tab and click on it to activate the heifer calculator. This calculator is shown in **Figure 12**.

Figure 12. Heifer Calculator



There are four support data entries that must be made by the user in the heifer calculator screen. These, along with their definitions, are shown in the following table:

Table 1. Heifer Calculator Field Definitions

Support Data Entry	Explanation
Average Weight at Birth	Enter the expected average birth weight for a heifer calf.
Heifer death loss (avg. 24m)	Enter the average death loss for heifer calves and yearlings. This is entered at a whole percent.
Average Age of First Calving	Enter the average age of a bred heifer at first calf.
Value of Calf	Enter the price paid by the heifer enterprise for a calf secured from the dairy cow enterprise.

As was detailed in the Bella Acres Dairy case farm write-up, the operators maintain a management practice that keeps death loss to 6 percent and the average age of first calving at 24 months. With these management parameters in place, the **HEIFER CALCULATOR** shows that the average number of heifers finished will be 27. These heifers will be available to go back to the **DAIRY COW** enterprise as replacements for culled cows. Changing the average age of first calving will alter the number of two-year old heifers available to the **DAIRY COW** enterprise and the cost per finished heifer.

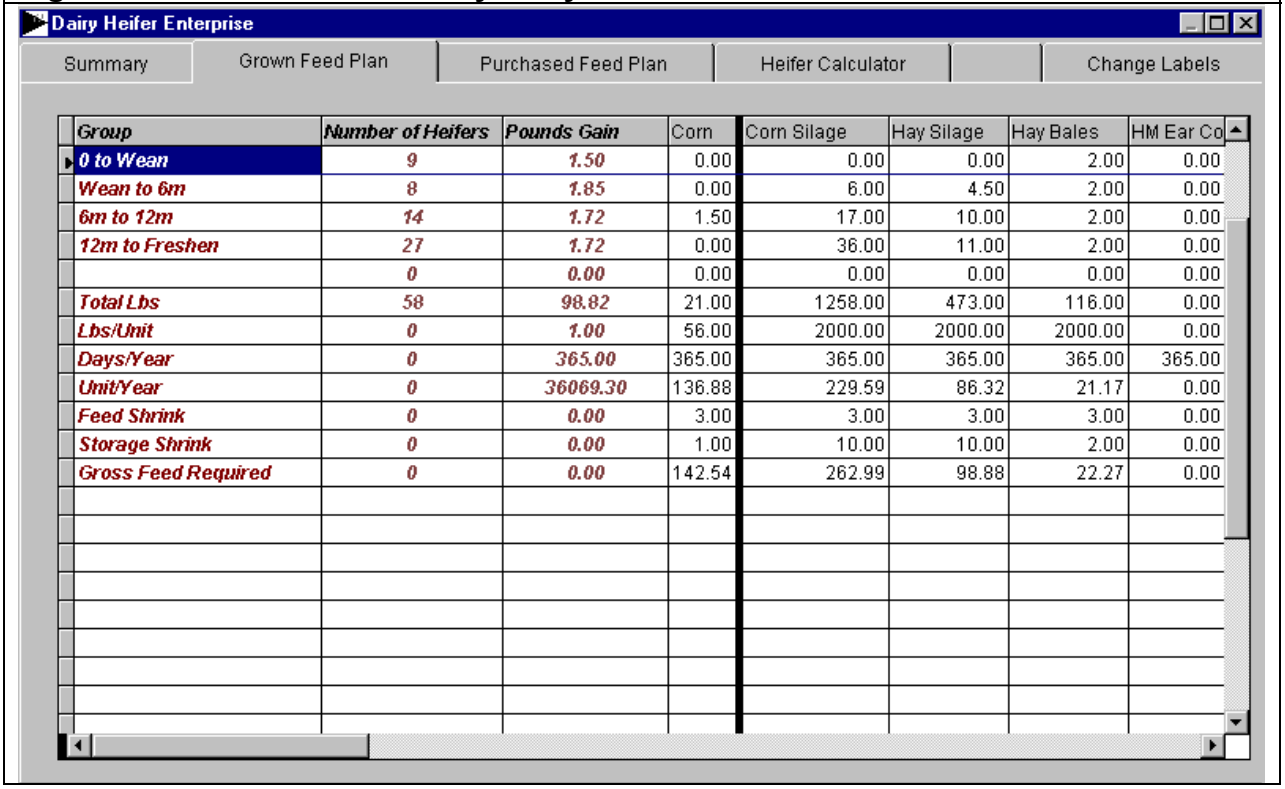
Also available on the **HEIFER CALCULATOR** is an active button labeled **MORE INFORMATION**. Activating this button will provide a help screen for the user that will

contain information about the heifer calculator and the calculations that it performs. To exit the **HEIFER CALCULATOR**, place the mouse pointer over the dairy heifer **SUMMARY** Tab and the user will be returned to the **DAIRY HEIFER ENTERPRISE** screen.

Grown Feed Worksheet

The **GROWN FEED PLAN** worksheet accompanying the **DAIRY HEIFER** menu is shown in **Figure 13** and will be reviewed in detail. You may either enter the data into the worksheet or review the Bella Acres Dairy case farm material at the beginning of this manual.

Figure 13. Grown Feed used by Dairy Heifers



Group	Number of Heifers	Pounds Gain	Corn	Corn Silage	Hay Silage	Hay Bales	HM Ear Co
0 to Wean	9	1.50	0.00	0.00	0.00	2.00	0.00
Wean to 6m	8	1.85	0.00	6.00	4.50	2.00	0.00
6m to 12m	14	1.72	1.50	17.00	10.00	2.00	0.00
12m to Freshen	27	1.72	0.00	36.00	11.00	2.00	0.00
	0	0.00	0.00	0.00	0.00	0.00	0.00
Total Lbs	58	98.82	21.00	1258.00	473.00	116.00	0.00
Lbs/Unit	0	1.00	56.00	2000.00	2000.00	2000.00	0.00
Days/Year	0	365.00	365.00	365.00	365.00	365.00	365.00
Unit/Year	0	36069.30	136.88	229.59	86.32	21.17	0.00
Feed Shrink	0	0.00	3.00	3.00	3.00	3.00	0.00
Storage Shrink	0	0.00	1.00	10.00	10.00	2.00	0.00
Gross Feed Required	0	0.00	142.54	262.99	98.88	22.27	0.00

The **GROWN FEED PLAN** worksheet contains a substantial amount of information and must be thoroughly understood by the user of MRP/Dairy™ software program. The user must recognize that, in a heifer operation, to be able to calculate the feed requirement the output is pounds of heifer and not the number of animals. First, a review of the worksheet layout is in order. The worksheet is arranged in **ROWS** and **COLUMNS**. The rows contain the information for each group of animals in the milking herd and for the feed intake requirements for an animal in each group.

NOTE: Many of the **ROW** labels can be altered by the user simply by highlighting the worksheet cell and typing in a new label. Reminder: Once you have changed a label the program

will continue to use that label from that point on. Some labels in the **ROWS** should not be altered by the user. These are the labels beginning with **Total Lbs** and progressing through **Gross Feed Required.**

The columns in the feed worksheet contain the following information. The first column **Number of Heifers** is used to record the number of calves and yearling animals in each group. The second column **Pounds of Gain** is used to record the expected average weight gain per day per animal for each group. The third column through the end of the worksheet contains the feed ingredient sources. These are a complete list of all of the **GROWN CROPS** plus two open categories as listed on the **FARM ACTIVITIES** screen.

Dairy Heifer Enterprise: Bella Acres Dairy has the following heifer herd structure:

Table 2. Dairy Heifer herd structure for Bella Acres Dairy Case Farm.

Age Group	Average Number of Animals	Average Weight Gain / Lbs / Day
0 to Wean	9	1.50
Wean – 6 months	8	1.85
6 months – 12 months	14	1.72
12 months – Freshen	27	1.72

Total Lbs [calculated]: Following down the column headed **Pounds of Gain** to the row labeled Group Total you will see the value 98.82. This is calculated by the MRP/Dairy™ program based on the information supplied by the user for number of animals and average production per animal. In a heifer raising operation, the output must be defined as the pounds of heifer raised over a given period of time. Feed input requirements are expressed in pounds fed per day and the animal will gain an expected amount of weight per day as it moves from one group or category to the next.

Lbs/Unit [user entry]: The next row entry below **Total Pounds** is **Lbs/Unit**. This is where the user enters the appropriate conversion factor. For example, in the column headed **Pounds Gain** the output is in pounds of gain. We will want to work with total gain in pounds. In this case, the proper **Lbs/Unit** entry will be 1 to indicate that the pounds per day are the basic units. Under most normal circumstances this entry does not require alteration.

Days/Year [user entry]: The next row label in the first column following **Lbs/Unit** is **Days/Year.** This is the row in which the user enters the number of days per year that the milk is produced or the feed input is required. In the example of milk produced, the entry here is 365 indicating that the operators of Bella Acres Dairy expect to feed the animals in the heifer enterprise for 365 days.

Units/Year [calculated]: The entries in this row are calculated by the program. For the heifer enterprise this calculation is the number of hundredweight per day multiplied by the number of days per year entered by the user. For Bella Acres Dairy this calculation shows an expected production level of 36,069.30 pounds of gain. For feed input this entry will be the total feed required per day converted from pounds to the appropriate units (bushel or tons) multiplied by the total days fed to arrive at a total feed requirement. NOTE: This total feed requirement does not include loss due to either feed shrink or storage shrink.

Feed Shrink [user entry]: The next row label is Feed Shrink. Here the user must enter the percent of the feed, by type, that is lost during the feeding process. **NOTE:** The percent is entered as the whole percent, e.g., five percent feed shrink is entered as 3.0 and **NOT 0.03.** In the case study farm, the operators of Bella Acres Dairy anticipate a 3 percent feed shrink for both the corn grain feed and the forages.

Storage Shrink [user entry]: The next row label is **Storage Shrink.** This row records the user's best information as to the amount, specified as a percent, of each feed type that is lost in storage. This amount is due to physical loss and not to shrink due to moisture reduction which is recorded in the **GRAIN ASSESTS** menu and not here. This loss represents the amount of feed that comes out of the field and goes into storage but does not come out of storage and go to the feed bunk or alley. For Bella Acres Dairy this is 1 percent for corn grain, 2 percent for hay bales, and 10 percent for the silages.

Gross Feed Required [calculated]: The final row in the worksheet is the **Gross Feed Required** label. The entries in this row are calculated by the program. These entries show the gross feed required by feed type after both feed shrink and storage shrink are accounted for in the calculations. For example, on the Bella Acres Dairy operation, the amount of shelled corn required to meet the feed intake needs of the dairy cow herd is 136.88 bushels **BEFORE SHRINKAGE LOSS.** After adjusting for a feeding and a storage loss of 3 and 1 percent, respectively, the Gross Feed Requirement is 142.54 bushels of corn grain.

Gross Feed Required is an important calculation for the following reason. Bella Acres Dairy has an anticipated corn grain production of 16,800 bushels as determined from the **GRAIN CROPS** menu. The **DAIRY COW** enterprise requires an anticipated 6,763 bushels to feed to the dairy cowherd. The heifer enterprise requires an additional 143 bushels of corn. The total amount of shell corn required is 6,906. This leaves 9,894 bushels of corn grain to be marketed in the grain market.

Looking at the other feed input entries in the **Gross Feed Requirement** row we can see that the operators of Bella Acres Dairy will require 262.99 tons of Corn Silage, 98.88 tons of Hay Silage, and 22.27 tons of Hay Bales to complete the **GROWN FEED** requirement of the **DAIRY HEIFER** enterprise. If the farm produces enough of these crops to meet this feed requirement then the surplus will be added to that available to be sold. If the farm does not

produce enough to meet this feed requirement then the deficit amount will have to be purchased as a purchased feed ingredient.

After the dairy heifer **GROWN FEED PLAN** worksheet is completed, the user can update the calculated entries at any time by pressing the **SUMMARY** Tab. After all entries are entered and verified for accuracy, pressing the **SUMMARY** Tab will update all calculations and go back to the **DAIRY HEIFER ENTERPRISE** screen.

At this point, if the user has entered market prices for the grown feed crops using the **EXPECTED PRICES** menu, the MRP/Dairy™ software will multiply each of the grown feeds required to calculate the market value of each and then sum these to arrive at the Feed Expense: Grown Feed and display this on the **DAIRY HEIFER ENTERPRISE** screen.

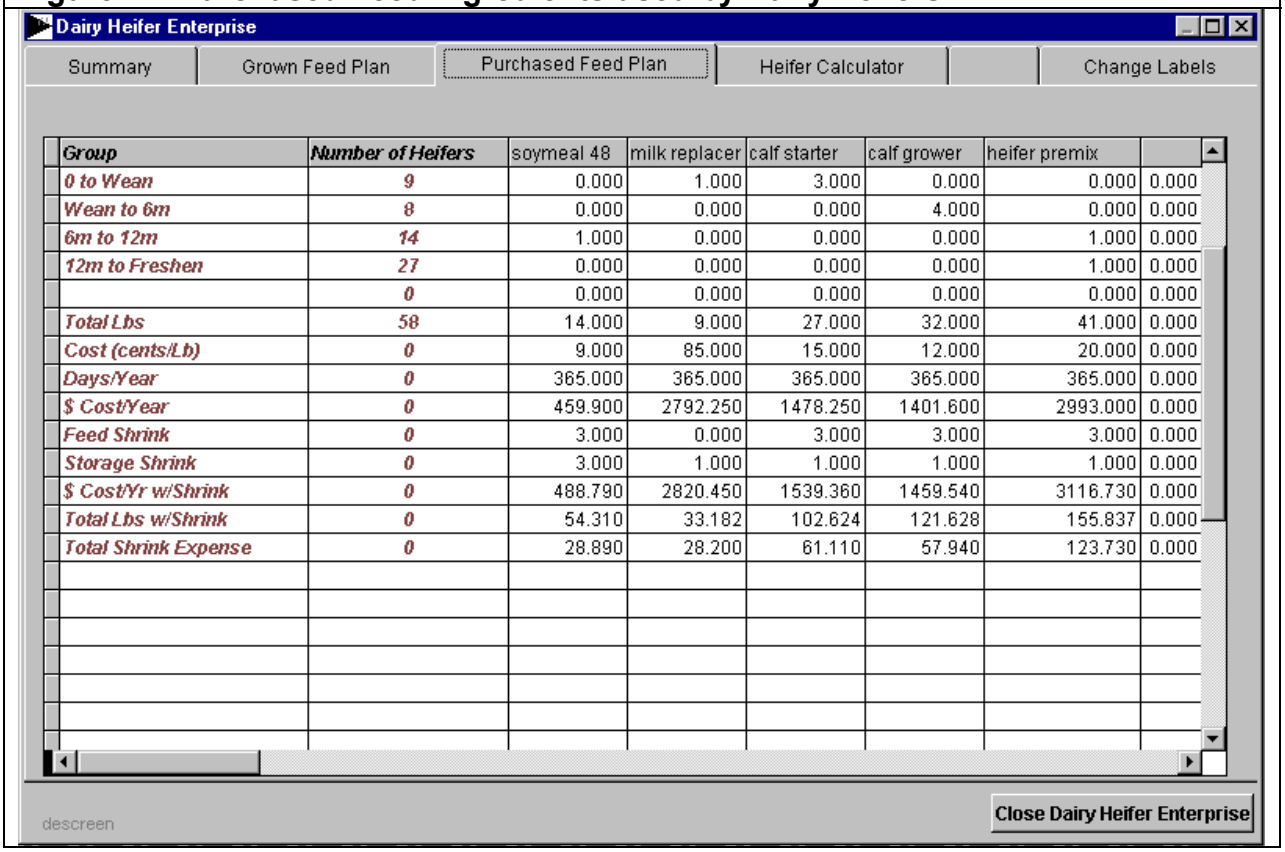
For Bella Acres Dairy this calculation shows the grown feed expense to the heifer enterprise to be $9,363.82. With an expected 27 freshening heifers in the Dairy Heifer enterprise, this amounts to $346.81 per heifer.

A final point about the calculated **Feed Expense: Grown Feed** of $9,363.82: this amount is automatically transferred to the appropriate entries on the Summary Data screens which will be discussed in detail later in this manual.

PURCHASED FEED INGREDIENTS

The dairy heifer **PURCHASED FEED PLAN** worksheet accompanying the **DAIRY HEIFER ENTERPRISE** menu is shown in **Figure 14** and will be reviewed in detail. You may either enter the data into the worksheet or review the Bella Acres Dairy case farm material at the beginning of this manual.

Figure 14. Purchased Feed Ingredients used by Dairy Heifers.



Group	Number of Heifers	soymeal 48	milk replacer	calf starter	calf grower	heifer premix	
0 to Wean	9	0.000	1.000	3.000	0.000	0.000	0.000
Wean to 6m	8	0.000	0.000	0.000	4.000	0.000	0.000
6m to 12m	14	1.000	0.000	0.000	0.000	1.000	0.000
12m to Freshen	27	0.000	0.000	0.000	0.000	1.000	0.000
	0	0.000	0.000	0.000	0.000	0.000	0.000
Total Lbs	58	14.000	9.000	27.000	32.000	41.000	0.000
Cost (cents/Lb)	0	9.000	85.000	15.000	12.000	20.000	0.000
Days/Year	0	365.000	365.000	365.000	365.000	365.000	0.000
$ Cost/Year	0	459.900	2792.250	1478.250	1401.600	2993.000	0.000
Feed Shrink	0	3.000	0.000	3.000	3.000	3.000	0.000
Storage Shrink	0	3.000	1.000	1.000	1.000	1.000	0.000
$ Cost/Yr w/Shrink	0	488.790	2820.450	1539.360	1459.540	3116.730	0.000
Total Lbs w/Shrink	0	54.310	33.182	102.624	121.628	155.837	0.000
Total Shrink Expense	0	28.890	28.200	61.110	57.940	123.730	0.000

The **PURCHASED FEED PLAN** worksheet contains a substantial amount of information and must be thoroughly understood by the user of MRP/Dairy™ software program. First, a review of the worksheet layout is in order. The worksheet is arranged much the same as the grown feed worksheet explained in the last section. The worksheet is laid out in **ROWS** and **COLUMNS**. The rows contain the information for each group of animals in the heifer and for the feed intake requirements for an animal in each group.

The enterprise layout in this worksheet must match the layout in the **GROWN FEED PLAN** worksheet. While this worksheet is very similar to the **GROWN FEED PLAN** worksheet, there are a couple of important differences to be aware of. First, prices used to value grain and forages in the **GROWN FEED PLAN** worksheet are entered into the MRP/Dairy™ program through the **EXPECTED PRICES** menu while in the **PURCHASED FEED PLAN** worksheet prices for each purchased ingredient are entered directly into the worksheet.

Second, the dairy heifer **PURCHASE FEED PLAN** worksheet calculated the total cost of the purchased feed ingredient directly. Third, the **PURCHASED FEED PLAN** worksheet calculates the amount of purchased feed ingredients required for the livestock enterprise and the cost to the producer associated with feeding and storage shrinkage.

Finally, as with the **GROWN FEED PLAN** worksheet, the total cost of all purchased feed ingredients is transferred back to the **DAIRY HEIFER ENTERPRISE** screen and to other appropriate **SUMMARY DATA** screens.

NOTE: Most of the **ROW** labels can be altered by the user simply by highlighting the worksheet cell and typing in a new label. **REMINDER:** Once you have changed a label the program will continue to use that label from that point on. Some labels in the **ROWS** should not be altered by the user. These are the labels beginning with **Total Lbs.** and progressing through **Total Shrink Expense.**

The **COLUMN** labels for the purchased feed ingredients can be altered by the user to fit the particular feeding program. To alter these labels (or any of the **COLUMN** labels in these worksheets) select the **CHANGE LABELS** Tab on the **DAIRY HEIFER ENTERPRISE** screen. This will open a label's worksheet where the user can type in any labels for the column heading that are desired. After completing the new labels, the user will press the **PURCHASED FEED PLAN** Tab on the keyboard and the new labels will be registered in the worksheets.

The columns in the feed worksheet contain the following information. The first column **Number of Heifers** is used to record the number of animals in each group. The second column through the end of the worksheet contains the purchased ingredient sources.

Total Lbs. [calculated]: Following down the column headed **Milk Replacer** to the row labeled Total Lbs. you will see the value 9. This is calculated by the MRP/Dairy™ program based on the information supplied by the user for number of animals and average purchased ingredient; in this case, milk replacer fed per animal.
Cost(Cents/Lb) [user entry]: The next row entry below **Total Lbs.** is **Cost(Cents/Lb)**. This is where the user enters the appropriate price per pound for the purchased ingredient type. For example, in the column headed **Milk Replacer** the total feeding rate is 9 pounds and the expected average cost per pound is 85 cents/lb. The user will enter the cost per pound for each of the purchased feed ingredients in the cells in this row.

Days/Year [user entry]: The next row label in the first column following **Cost(Cents/Lb)** is **Days/Year**. This is the row in which the user enters the number of days per year that the feed input is required. In the example of purchased **Milk Replacer**, the entry here is 365 indicating that the operators of Bella Acres Dairy expect to produce feed this ingredient 365 days - the production year.

$Cost/Year [calculated]: The entries in this row are calculated by the program. For each of the purchased feed ingredients the output of this calculation is the total cost of the purchased feed ingredient over the specified number of days. **NOTE:** This total purchased ingredient cost does not include loss due to either feed shrink or storage shrink.

Feed Shrink [user entry]: The next row label is **Feed Shrink.** Here the user must enter the percent of the purchased ingredient, by type, that is lost during the feeding process. **NOTE:** The percent is entered as the whole percent, e.g., five percent feed shrink is entered as 5.0 and **NOT 0.05.** In the case farm, the operators of Bella Acres Dairy anticipate a percent feed shrink for the purchased ingredient **Milk Replacer.** A review of the other entries in this row indicates the anticipated feed shrink by type of purchased ingredient.

Storage Shrink [user entry]: The next row label is **Storage Shrink**. This row records the users best information as to the amount, specified as a percent, of each purchased ingredient feed type that is lost in storage. This amount is due to physical loss. This loss represents the difference between the amount of purchased ingredient bought and stored and the amount that actually goes to the feed bunk or alley.

$Cost/Yr w/Shrink [calculated]: The next row in the worksheet is the **$Cost/Yr w/Shrink** label. The entries in this row are calculated by the program. These entries show the total cost, by each purchased ingredient, including feed and storage shrinkage. Gross expense after both feed shrink and storage shrink are accounted for in the calculations

Total Lbs w/Shrink [calculated]: The next row in the worksheet is the **Total Lbs. w/ Shrink** and this shows the total amount of the purchased ingredient that is required to meet the ration requirements for the livestock enterprise.

Cost of Shrink [calculated]: The final row in the worksheet shows the calculated dollar cost of shrink to the livestock enterprise. The MRP/Dairy™ program calculates this for the user. Because controlling the losses to product loss in either storage and/or feeding can have an important impact on the overall cost of feeding livestock, it is important that the user be made aware of this expense. For the operators of Bella Acres Dairy, the dollar cost of storage and feeding loss for purchased feed ingredients is $299.87. This adds $11.11 to the feed cost per finished heifer in the **DAIRY HEIFER** enterprise.

After the dairy heifer **PURCHASED FEED PLAN** worksheet is completed, the user can update the calculated entries at any time by pressing the **SUMMARY** Tab. After all entries are entered and verified for accuracy, pressing the **SUMMARY** Tab will update all calculations and go back to the **DAIRY HEIFER ENTERPRISE** screen.

At this point the **DAIRY HEIFER ENTERPRISE** data entry will be completed. The summary information on this screen shows that, for Bella Acres Dairy, the feed cost per finished heifer is expected to be $695.88 per heifer. In addition to this expense, we will have to add in the other expenses associated with the heifer rearing enterprise to arrive at the total economic cost of a finished heifer. These calculations are completed in the **MY RISK: HEIFER** screen that will be reviewed later in this manual.

After all of the livestock enterprises support data screens have been completed, the user can return to the main menu by pressing the **Close Dairy Heifer Enterprise** button on the screen. This action will return the user back to the main control screen.

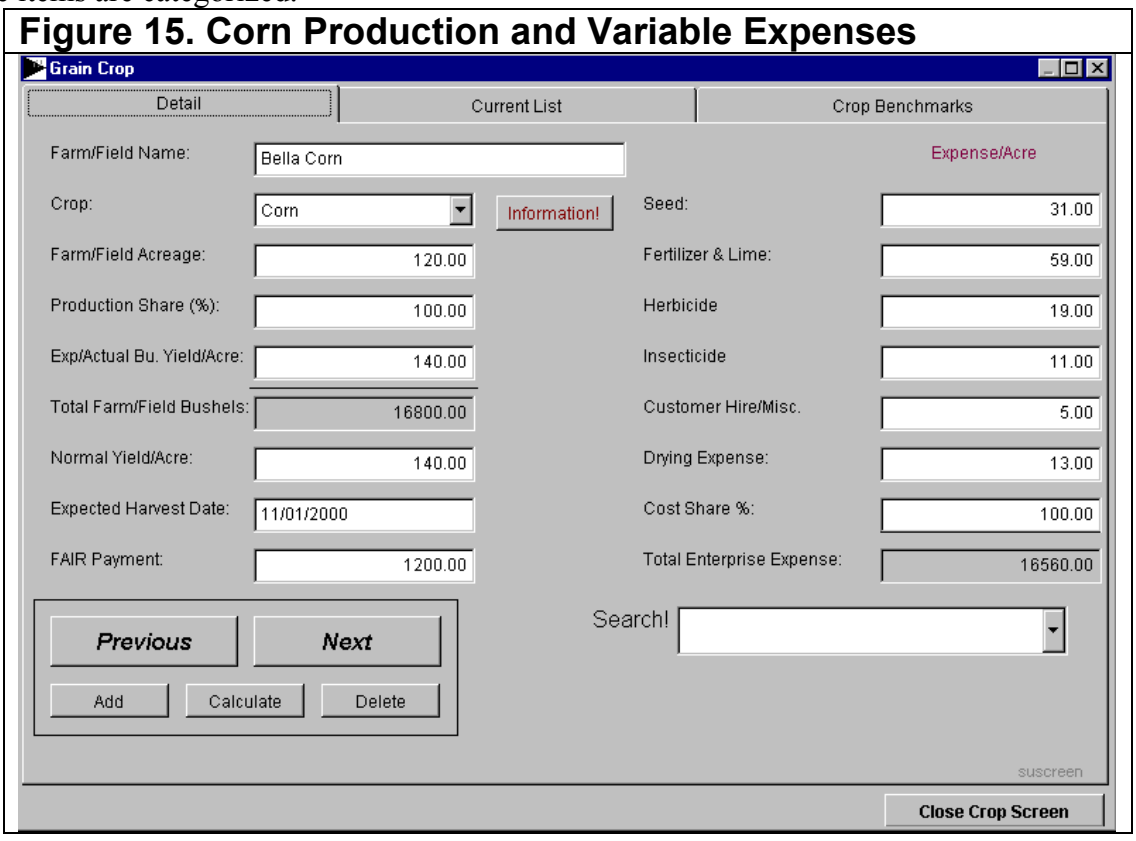
DAIRY BEEF ENTERPRISE

If you have selected the **DAIRY BEEF** enterprise on the **DAIRY ENTERPRISES** button the enterprise will be the **DAIRY BEEF** enterprise. The data entry for this **DAIRY BEEF ENTERPRISE** screen is very similar to the **DAIRY COW ENTERPRISE** screen. The user must enter the quantity of beef to be produced along with the feed requirements, both grown and purchased. Selecting **DAIRY BEEF** will add the appropriate records to be completed for **EXPENSES** also.

GRAIN CROP ENTERPRISES

The grain crop enterprises are entered on the **GRAIN CROP** screens. Click the **FARM DATA** button and then click the **GRAIN CROP** button. The **GRAIN CROP** screen, shown in **Figure 15,** is used to enter grain crop production and variable cost data. By definition, variable costs are "out of pocket" expenditures, which would not be paid if a crop were not planted. All variable costs are included in cash flow obligations and as total costs. **Table 3** below shows how these items are categorized.

Figure 15. Corn Production and Variable Expenses



Variable costs may be entered for the Bella Acres Dairy farm, for a number of different farms that are operated by Bella Acres Dairy, or for different crop or forage fields on the farm. If Bella Acres Dairy were farming a piece of land that they owned, a second rented for cash, and a third rented on the shares, the data should be entered separately for all three farms.

Alternatively, if different fields have different production capacities, costs, and risks all data could be entered by field. After the data are entered, the software program sums all entries and keeps all corn data together. Entering corn data for three different farms or for three different fields is possible because the program sums all the corn data together for the Producer's farm business.

Removing All Data from a Database Screen

Clicking the mouse on the **DELETE** button deletes any data that are currently on the displayed screen. If a new plan is being developed, always delete the old data. If, on the other hand, the plan is being revised, **do not** delete existing data. Clicking on the **NEXT** and **PREVIOUS** buttons reveals whether there are data in this database. After all data are deleted, clicking on the **NEXT** button generates the statement "end of file" and clicking on **PREVIOUS** button generates the statement "beginning of file". When these statements appear in the upper left hand corner of the **GRAIN CROP** screen and zeroes (0) appear in all fields, the **GRAIN CROP** database is void of all data.

TABLE 3. ITEMIZATION OF COSTS AND CASH FLOWS

ITEMS	DATA INPUT SCREEN	EXPENSE	CASH FLOW
All variable crop expenses	Grain Crop, Figure 15	Yes	Adds
Livestock Expenses	Expenses	Yes	Adds
Machinery Expenses	Expenses	-	-
1. Depreciation	Expenses	Yes	No
2. Insurance	Expenses	Yes	Adds

3. Interest on Equity	Expenses	Yes	No
4. Interest on Loans	Expenses	Yes	Adds
5. Repairs	Expenses	Yes	Adds
Labor Expense	Expenses	-	-
1. Income Tax & S.S., farm operator income	Expenses	No	No
2. Value of Unpaid Labor	Expenses	Yes	No
3.Wages Paid (hired labor)	Expenses	Yes	Adds
Land and Buildings	Expenses	-	-
1.Depreciation	Expenses	Yes	No
2.Insurance on Buildings	Expenses	Yes	Adds
3.Interest on Loans	Expenses	Yes	Adds
4. Interest on Equity	Expenses	Yes	No
5. Property Tax	Expenses	Yes	Adds
Family Living Expenses	Expenses	No	Adds
Miscellaneous Expenses	Expenses	Yes	Adds

Payments	Expenses	-	-
1. Down Payments	Expenses	No	Adds
3. Scheduled Principal and Interest Payments	Expenses	No	_

IMPORTANT: TO ADD A NEW DATABASE RECORD YOU MUST use the mouse to click on the **ADD** button on the **GRAIN CROP** screen, **Figure 15**. Before entering data into any of these screens, one must first select the **ADD** button. **(If this procedure is not followed, the data will not be correctly entered into the database).** Selecting the **ADD** button highlights the Farm/Field Name field.

Entering Grain Crop Data

In this example, data will be entered for corn and soybeans. Forage crops will be discussed in the Forage Crops section. It is assumed that at Bella Acres Dairy corn and soybean are the grain crops grown on farm. To begin entering the data for corn, enter a record title in the highlighted **Farm/Field Name** field (**Figure 15**). In the example this is entered as Bella Corn. Pressing the Tab key on the keyboard highlights the Crop field. Use the mouse to click on the **CROP** button. A pull-down screen appears. Click **Corn**. The crop names that appear were identified on the **FARM ACTIVITIES** screen in **Figure 5**. In this example, corn and soybeans are the two-grain crops grown by the Bella Acres Dairy.

Use the mouse to click on corn and then using the Tab key highlight the **Farm/Field Acreage** field. Enter 120 acres into this field and select the Tab key. This highlights the **Production Share %** field. In this field, enter the share of production that the Bella Acres Dairy will receive. In this example, 100% is entered indicating that 100% of the production will be received by the operators of Bella Acres Dairy. Pressing the Tab key highlights the **Expected /Actual Bu. Yield/Acre** field. The operators of Bella Acres Dairy base their yield estimates on a five- or 10-year moving average for their farm or for a specific field on the farm. If crop yield data are not available for your farm, county data and yield probability distributions should be obtained from a secondary source.

For the Bella Acres Dairy case farm, 140 bushels is entered. With this information, the MRP/Dairy™ software program calculates that 16,800 bushels of corn production are expected **(Total Farm/Field Bushels)** and the **Normal Yield/Acre** field is highlighted. (**Note:** If a crop failure is expected or occurs and/or there is a need to estimate the indemnity payment from an insurance policy, reduce the estimated bushels in the **Expected/Actual Bu**.**Yield/Acre.** To reflect a complete crop failure, one would enter zero (0) in the **Expected/Actual Bu. Yield/Acre** field. The payout from a crop failure will be discussed in more detail when the **INSURANCE**

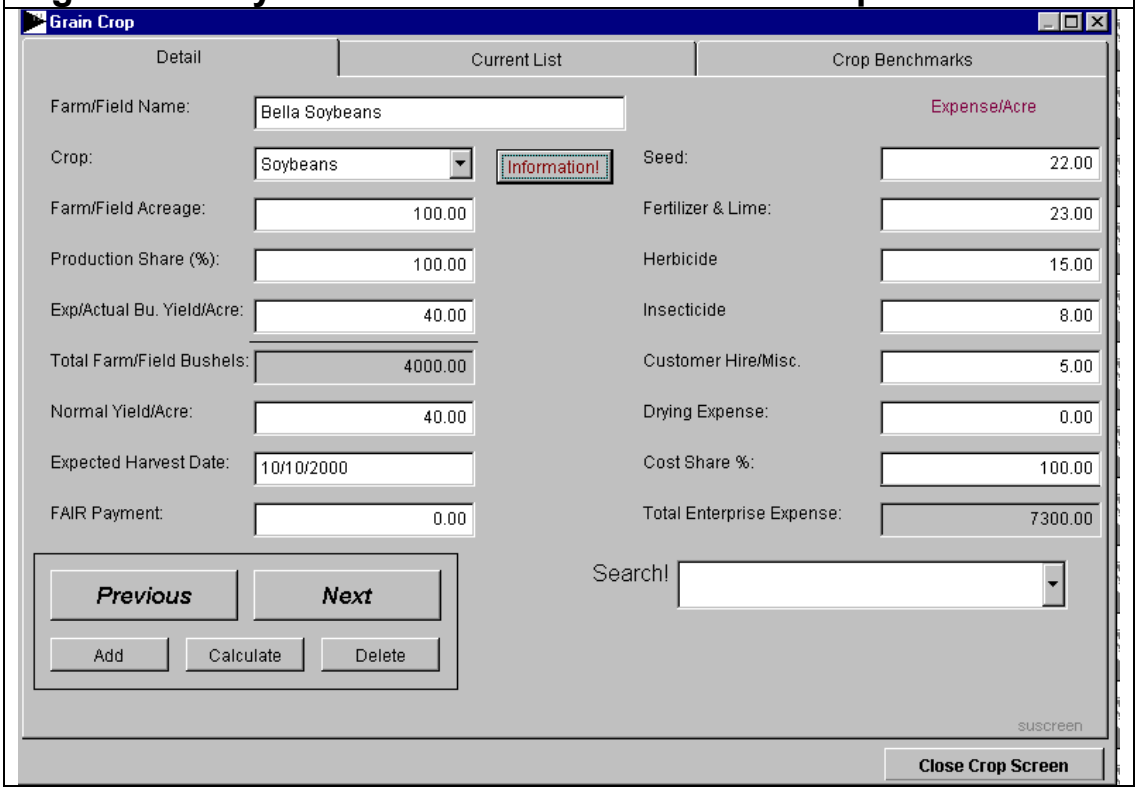
PRODUCT screen is examined). For this example, 140 bushels has been entered in the **Normal Yield/Acre** field.

Pressing the Tab key will highlight the **Seed** field in the right hand panel **Expense/Acre** variable cost section. Enter the following variable cost data into each field, seed: $31/acre, fertilizer & lime: $59, herbicide: $19, insecticide: $11, custom hire/misc: $5, drying expense: $13. In this section, the drying cost is the expense to dry corn to the 15% moisture level. If corn is stored, the additional drying costs are reported in the **GRAIN ASSETS** section of the program.

Since the Bella Acres Dairy are owners and are receiving 100% of the production share, they also must pay 100% of the cost share. (If the Bella Acres Dairy were farming on a 50:50 share basis, the Bella Acres Dairy would enter 50% in this field). Based on the above entries, the software estimates **Total Expenses** or total variable cost at $16,560.00. Since the **Expected Harvest Date** is highlighted, enter 11/01/2000 and press the Tab key. After the corn production and cost data for the Bella Acres Dairy are reviewed, you can review the soybean data for the farm (these input data are recorded in **Figure 16**).

Before entering each set of data for each crop, use the mouse to click on the ADD button. Remember, you must click on the **ADD** button before entering new database records.

Figure 16. Soybean Production and Variable Expense data.



The **NEXT** and **PREVIOUS** buttons that appear on the **GRAIN CROP** screens are used to review all entries for each specific crop. By clicking on the **PREVIOUS** button you can review the data that were entered for other crops or forages.

The **CALCULATE** button on the **GRAIN CROP** screens is used to sum up the data that were entered. The calculation button is used when an entry is revised and the user does not Tab all the way through the screen. Tabbing through all of the entries on the screen automatically activates the calculation button.

The DISPLAY TOTALS button that appears on the **GRAIN CROP** screen reveals a summary table. This summary table shows the bushels of corn and soybeans and their respective variable costs for each field or farm that is listed in the main crop or forage screens. In this example, the operators of Bella Acres Dairy are expecting to produce 16,800 bushels of corn and 4,000 bushels of soybeans on the home place. The total variable cost for corn is $16,560 and $7,300 for soybeans. The landlord's share of production and cost are not displayed.

After all data are entered, the **CURRENT LIST** Tab provides a spreadsheet summary of grains, total bushels, total expense, production share, and expected harvest date by farm(s) and/or field(s).

Click on the **Close Crop Screen** button on the **GRAIN CROP** screen (**Figure 16**) to return to the main menu, **Figure 1**. Select the **FILE** button and then save the data to the preferred drive and sub-directory by using the **SAVE AS** dialog box seen in **Figure 3.** After saving the data return to the main menu.

FORAGE CROP ENTERPRISES

The forage crop enterprises are entered on the **FORAGE CROP** screens. Click the **FARM DATA** button and then click the **FORAGE CROP** button. The **FORAGE CROP** screen, shown in **Figure 17**, is used to enter forage crop production and variable cost data. By definition, variable costs are "out of pocket" expenditures, which would not be paid if a crop were not planted. All variable costs are included in cash flow obligations and as total costs. The categorization set out in Table 3 applied to forage crops as well as grain crops.

Entering Forage Crop Data

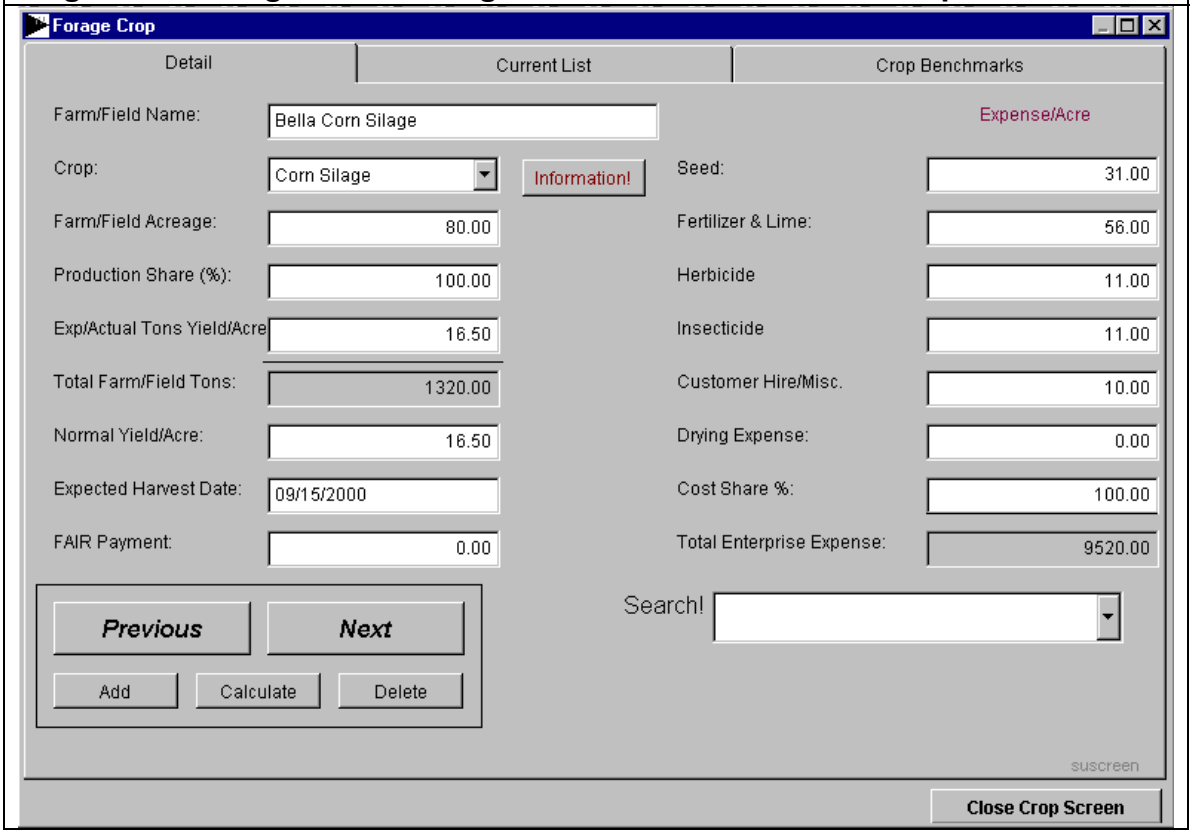
In this example, data will be entered for corn silage, hay silage, and hay bales. It is assumed that at Bella Acres Dairy these are the forage crops grown on farm and fed to the livestock (a complete description of the crop / forage / feed program can be found in the Bella Acres Dairy Case Farm section of this manual). To begin reviewing or entering the data for corn silage (or haylage and hay bales), enter a record title in the highlighted **Farm/Field Name** field (**Figure 17.**).

In the example this is entered as Bella Corn Silage. Pressing the Tab key on the keyboard highlights the Crop field. Use the mouse to click on the **CROP** button. A pull-down screen appears. Click **Corn Silage** The crop names that appear were identified on the **FARM ACTIVITIES** screen**.** In this example, corn silage, hay bales and hay silage are the three forage crops grown by the Bella Acres Dairy.

Use the mouse to click on corn and then using the Tab key highlight the **Farm/Field Acreage** field. Enter 80 acres into this field and select the Tab key. This highlights the **Production Share %** field. In this field, enter the share of production that the Bella Acres Dairy will receive. In this example, 100% is entered indicating that 100% of the production will be received by the operators of Bella Acres Dairy. Pressing the Tab key highlights the **Expected /Actual Tons Yield/Acre** field. The operators of Bella Acres Dairy base their yield estimates on a five- or 10-year moving average for their farm or for a specific field on the farm.

For this case farm, 16.5 tons per acre is entered. The amount entered here must be calculated after the user has determined the feed ration for the dairy livestock. These calculations are completed in the **DAIRY ENTERPRISES** menu section and will be discussed in detail after this section. With this information, the MRP/Dairy™ software program calculates that 1,320 tons of corn silage production are expected **(Total Farm/Field Tons)** and the **Normal Yield/Acre** field is highlighted.

Figure 17. Forages: Corn Silage Production and Variable Expense Screen.



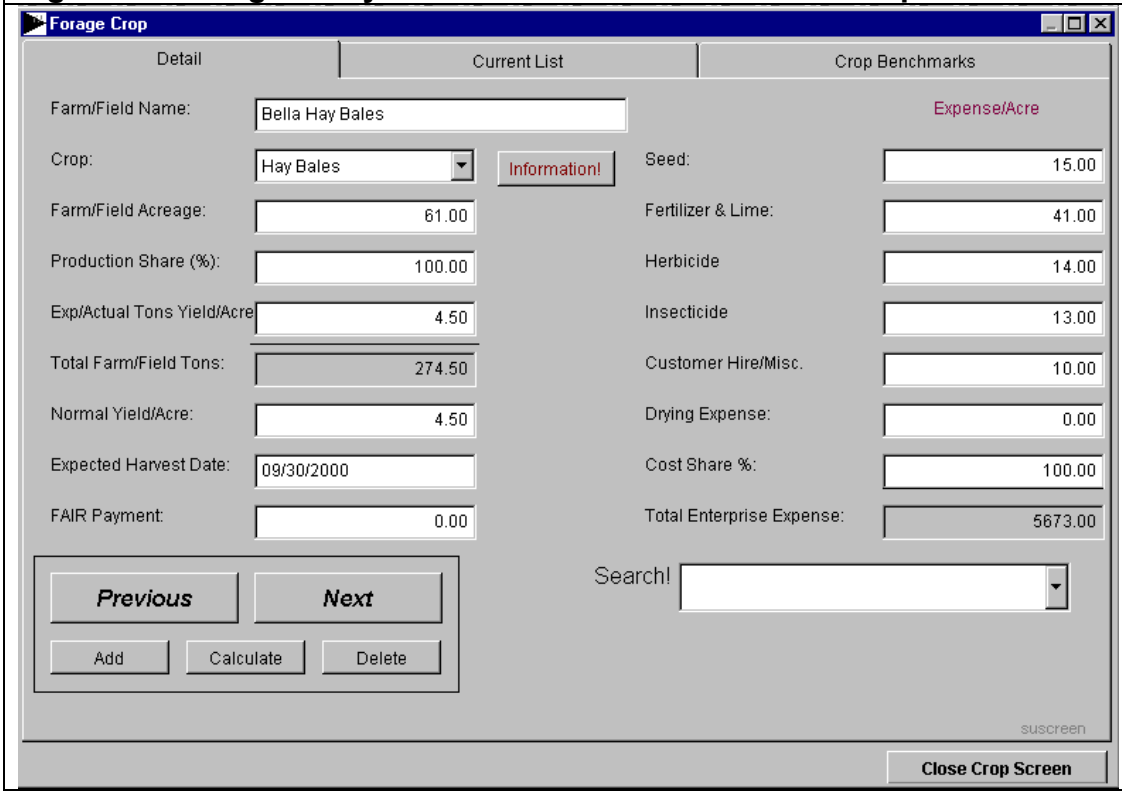
(**Note:** If a crop failure is expected or occurs and/or there is a need to estimate the indemnity payment from an insurance policy, reduce the estimated bushels in the **Expected/Actual Tons Yield/Acre.** To reflect a complete crop failure, one would enter zero (0) in the **Expected/Actual Tons Yield/Acre** field. The payout from a crop failure will be discussed in more detail when the **INSURANCE PRODUCT** screen is examined). For this example, 16.5 tons has been entered in the **Normal Yield/Acre** field.

Pressing the Tab key will highlight the **Seed** field in the right hand panel **Expense/Acre** variable cost section. Enter the following variable cost data into each field, seed: $31/acre, fertilizer & lime: $56, herbicide: $11, insecticide: $11.00, custom hire/misc: $10, and drying expense: $0.

Since the Bella Acres Dairy are owners and are receiving 100% of the production share, they also must pay 100% of the cost share. (If the Bella Acres Dairy were farming on a 50:50 share basis, the Bella Acres Dairy would enter 50% in this field). Based on the above entries, the software estimates **Total Enterprise Expenses** or total variable cost at $9,520. Since the **Expected Harvest Date** is highlighted, enter 09/15/2000 and press the Tab key. After the corn silage production and cost data for the Bella Acres Dairy are reviewed, you can review or add the hay bales and hay silage data for the farm (these input data are recorded in **Figures 18** and **19**).

Before entering each set of data for each crop, use the mouse to click on the ADD button. Remember, you must click on the **ADD** button before entering new database records.

Figure 18. Forages: Hay Bales Production and Variable Expense Screen.

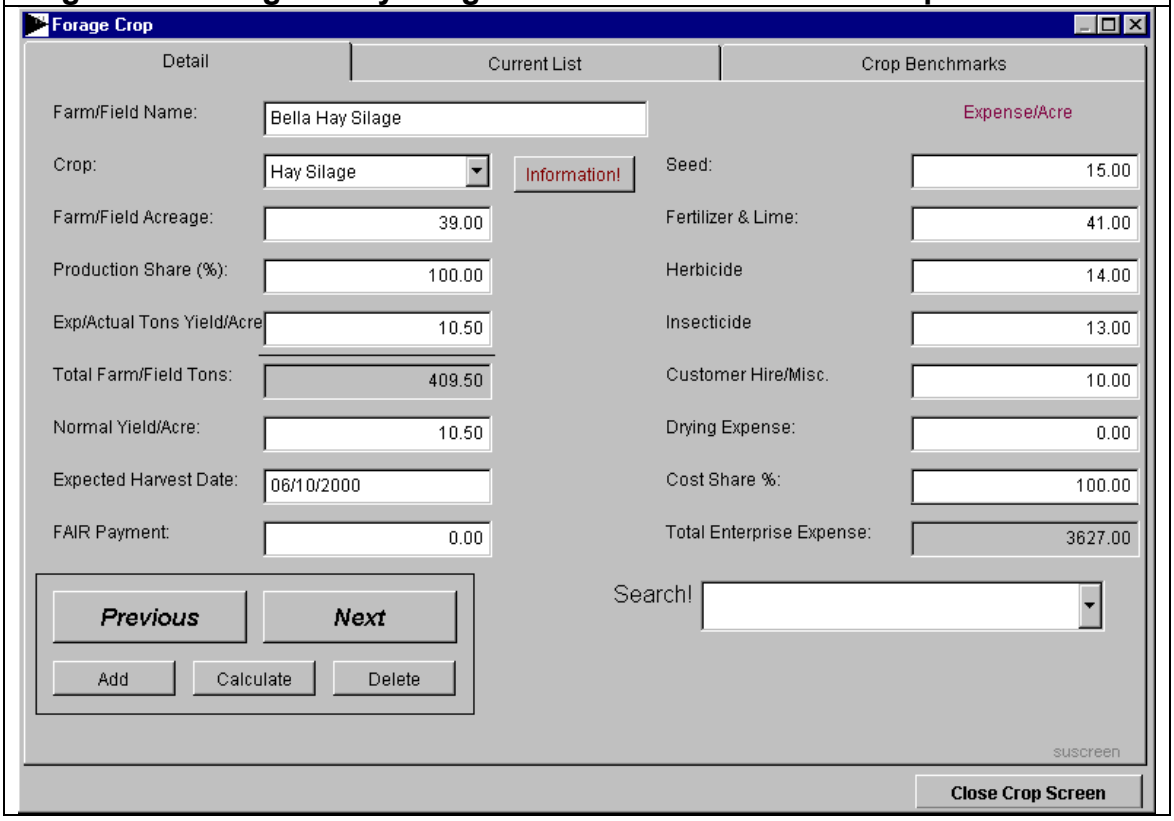


The **NEXT** and **PREVIOUS** buttons that appear on the **FORAGE CROP** screens are used to review all entries for each specific crop. By clicking on the **PREVIOUS** button you can review the data that were entered for other crops or forages.

The **CALCULATE** button on the **FORAGE CROP** screens is used to sum up the data that were entered. The calculation button is used when an entry is revised and the user does not Tab all the way through the screen. Tabbing through all of the entries on the screen automatically activates the calculation button.

The **CURRENT LIST** button that appears on the **FORAGE CROP** screens reveals a summary table. This summary table shows the tons of corn silage, hay silage and hay bales and their respective variable costs for each field or farm that is listed in the main forage screens. In this example, the operators of Bella Acres Dairy are expecting to produce 1,320, 274 and 409 tons of corn silage, hay bales and hay silage respectively. The total variable cost for corn silage is $9,520 and $5,673 for hay bales and $3,627 for hay silage.

Figure 19. Forages: Hay Silage Production and Variable Expense Screen.

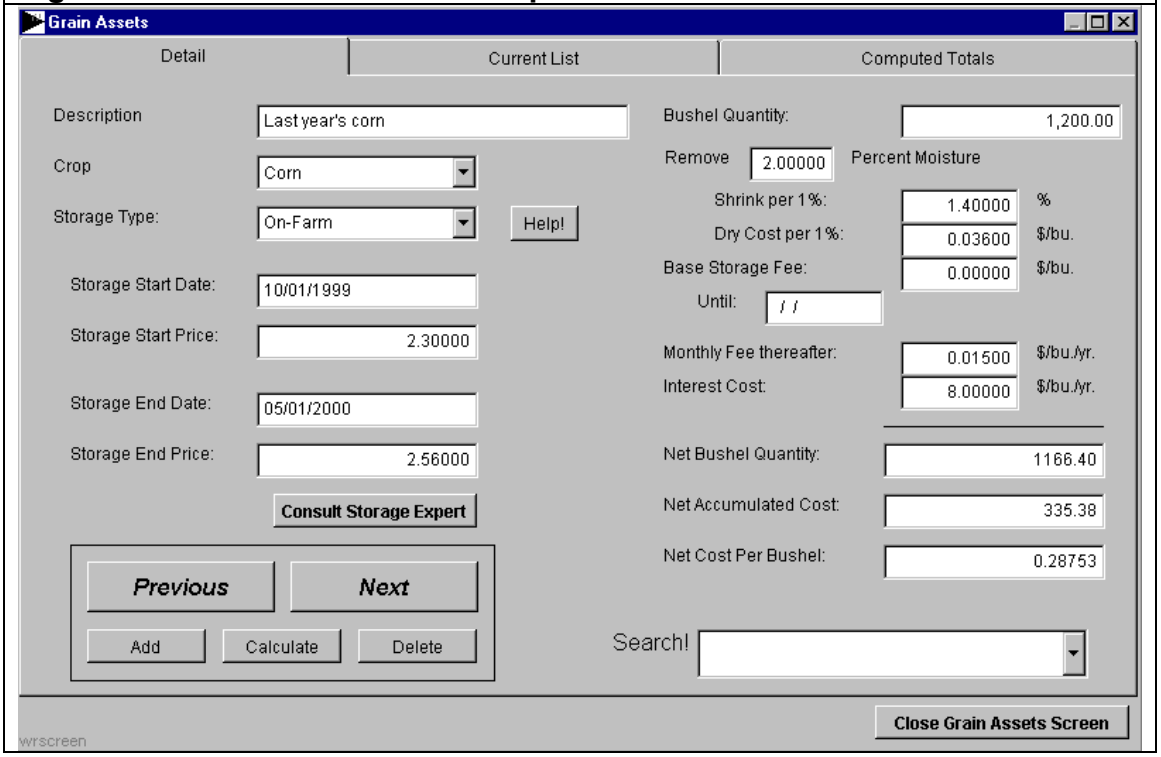


Click on the **CLOSE CROP SCREEN** button on the **FORAGE CROP** screen to return to the main menu, **Figure 1**. Select the **FILE** button and then save the data to the preferred drive and sub-directory by using the **SAVE AS** dialog box seen in **Figure 3.** After saving the data return to the main menu.

GRAIN ASSETS

GRAIN ASSETS is a drop down screen from the **FARM DATA** button on the main menu (**Figure 1**). Use the mouse to click on **FARM DATA** and then click on **GRAIN ASSETS (Figure 20)**. This entry screen is used to manage and market grain in storage, calculate drying costs to store grain and to estimate storage costs including interest, and under some circumstances to manage grain fed to livestock. **NOTE:** All of the buttons, **NEXT, PREVIOUS, ADD, CALCULATE, DELETE, CURRENT LIST,** and **COMPUTED TOTALS** perform the same functions as they performed in the previous input screens. Thus, these are not discussed here.

Figure 20. Grain Assets – Old Crop Corn Stored on Farm



If the farm has selected Dairy Livestock Enterprises which must be supplied grain and forages from the farm production, this current feed demand will generally be met out of existing grain and forage inventory and/or anticipated new crop production. If old crop inventory is used to cover all or some of the **GROWN FEED** requirement then this amount must be entered using the **GRAIN ASSETS** screen. In the case of Bella Acres Dairy, the annual requirement for corn was determined to be 6,906 bushels. This includes 6,763 bushels required by the **DAIRY COW** enterprise, and 143 bushels required by the **DAIRY HEIFERS** enterprise. Clearly the amount of this feed requirement that will come out of next year's anticipated corn crop must depend on the time at which the farm database is being completed.

As an example, the operators of Bella Acres Dairy may be using the ***cropping year*** as their planning period or they may be using a ***calendar year*** as the planning period. If the planning period is the cropping year, then the allocation of corn grain is shown in Table 4.

Table 4. Allocation of corn grain with a cropping year planning base.		
Corn Old Crop	**←----------Corn Old Crop----------→**	**Corn New Crop**
6,906 bushels on farm storage and entered in **GRAIN ASSETS**		
←10/01/99	←1/1/2000	←10/01/2000

In this example, the entire corn feed requirement is secured out of old crop harvested at 10/01/1999 and would be priced at the 10/01/1999 harvest price. This requires that this quantity of 6,903 bushels of corn grain be available and recorded in the **GRAIN ASSETS** screen. None of next year's corn production will appear as being allocated to the dairy cow enterprise. NOTE: In this example, the **RISK POSITION** screen will show that Bella Acres Dairy has 100% of the anticipated new crop available for sale and the portion of that which will go to the livestock enterprises will have to be allocated by using the **MARKETING ALTERNATIVES** menu and input screen.

As an alternative example, the operators of Bella Acres Dairy may be using the calendar year as their planning period, then the allocation of corn grain is shown in Table 5.

Table 5. Allocation of corn grain with a calendar year planning base.

Corn Old Crop	←----------Corn Old Crop----------→	Corn New Crop
9/12th of 6,906 = 5,180 bushels on farm storage and entered in **GRAIN ASSETS** to cover the 1/1/2000 to 10/1/2000 feed requirement		3/12th of 6,906 = 1,726.5 bu.
←10/01/99	←1/1/2000	←10/01/2000

In this example, the corn feed requirement must be allocated out of old crop in inventory and anticipated new crop to be harvested later in the planning period. For this example, Bella Acres Dairy is securing 9/12th's or 75% of the **GROWN FEED** requirement out of old crop harvested at 10/01/1999. This requires that this quantity of 0.75 x 6,903 = 5,180 bushels of corn grain be available and recorded in the **GRAIN ASSETS** screen. This grain would be fed out over the period 1/1/2000 – 10/1/2000. The remaining 25% of next year's corn production will appear as being allocated to the livestock enterprise on the **RISK POSITION** screen for **GRAIN**.

Entering Data for Grain Assets

To illustrate the use of the **GRAIN ASSETS** screen it is assumed that the operators of Bella Acres Dairy are storing some corn at the farm. Soybeans are stored at the elevator only, and all forages are stored at the farm only. **REMINDER:** To create a new record in the **GRAIN ASSETS** database, use the mouse to click on the **ADD** button. **NOTE: DELAYED PRICE GRAIN AND BASIS GRAIN WOULD NOT BE ENTERED IN THIS SECTION. ENTER ONLY GRAIN THAT IS BEING STORED FOR SALE!**

Entering Data for On-Farm Storage for Corn

After clicking on the **ADD** button, the **Description** field is highlighted as shown in **Figure 20**. Enter farm storage and press the Tab key on the keyboard. This will highlight the

Grain field. Use the mouse to select **corn**. Press the Tab key again highlighting the **Type** field. Use the mouse to select Type -> **On-farm storage.**

Storage Start Date is the date that most of the corn was moved into farm storage. In this example, it is assumed that the corn was stored on the farm on October 1, 1999. If corn is stored at three different dates, October 1, November 1, and November 15 for example, three separate entries could be made. The program would manage all three entries. **REMINDER:** Before each individual entry is submitted by the user, the **ADD** button must be activated.

Storage Start Price is the local cash price (futures price minus basis, or the local cash bid) for the corresponding **Storage Start Date.** It is assumed that the local cash bid on October 1, 1999 was $2.30 / bu.

Storage End Date is the expected or actual date at which time the corn is removed from storage for sale in the local market. In this example, it is assumed that the corn will be removed on May 1, 2000.

Storage End Price is the cash price at the end of the storage period. In this example, it would be the cash price on May 1, 2000. At the time grain is stored, this price is estimated from outlook information, a localized futures price (futures minus/plus basis), a forward contract price, or it may be the price that is needed to cover all storage costs and interest charges. The minimum price that is needed to cover storage cost is determined by the computer program; however, there is no guarantee that the market will achieve a cash market price that will cover pending storage costs. Let's assume a $2.56 storage end price.

At the time the grain is removed from storage, the price actually received for storing grain is entered in this field. The final price may differ from the original estimate if the futures price or basis changes during the storage period. In this example, it is assumed that the minimum price that is needed to cover storage costs and interest charges will be entered into this field.

Bushel Quantity is the amount of grain that is going to be stored from **Storage Start Date** to **Storage End Date**. Use the TAB key to move to this field. The operators of Bella Acres Dairy have decided to store 1,200 bushels from last years harvested corn crop.

Remove % Moisture field is the amount of additional moisture that must be removed to store the corn rather than selling it at harvest time. For example, number 2 yellow corn sold at harvest time contains 15.0% moisture. Reducing the moisture level to 15.0% to sell at harvest time is a part of production costs and was recorded as a drying cost in the **GRAIN CROP** section. If it were necessary to reduce the moisture level below 15.0% to store corn on farm, an entry would be made in the **Remove % Moisture** field. For this example, it is assumed that corn will be stored at the 13% moisture level. Thus, enter a two (2) in the **Remove % Moisture** field and press the tab key. NOTE: the number entered here is a percent and not the decimal equivalent, e.g., 13 for thirteen percent and not +0.13.

When water is removed from grain, shrinkage occurs. Since most elevators shrink the grain volume by 1.4% for each 1% of water removed, a default value of 1.4% appears in the **Shrink Per %** field. The user may choose to override this default value. For this example, the 1.4% shrink is accepted. Notice that the quantity of dry corn available for sale is now 1,166.40 bushels. This number appears in the **Net Bushel Quantity** field.

Dry Cost Per % field shows the cost per bushel per 1% moisture removed in the drying process. The default value for removing 1% of moisture is $0.036. The user may input a different entry. In this example, the default value is used.

Base Storage Fee is the fixed cost of storage on farm or the fixed charge that is made by the commercial house. On-farm fixed costs include insurance on storage bins and equipment, interest, and depreciation. In this example, it is assumed that fixed costs are $0.01 per bushel. Since this is a fixed farm storage cost, the date entered into the **Until** field is the same as the storage date, 10/15/1999. This implies that the variable cost of farm storage begins at the time the grain enters the bin. (In contrast, the fixed fee for storage at a commercial house often delays the monthly elevator charge fee for some time. Thus, monthly fees paid to the commercial house may not begin until 12/15/1999, for example. If grain is stored in a commercial house and monthly fees are not paid until 12/15/1999, this would be the date that is entered in the **Until** field).

The fixed cost for farm storage may or may not be entered into this program. If storage facilities are in place, the user must only cover variable cost of storage and interest charges to store grain in the short run time period. In that case, a zero (0) would be entered into the **Base Storage Fee** field. If the user is planning on investing in storage facilities and/or wants to know if all costs of storage are being covered in the long run, then a fixed cost entry is required. In contrast, the **Base Storage Fee** for commercial storage must always be included as this is a variable cost of storage.

The **Monthly Fee Thereafter** is the variable cost of storage for on-farm storage or is the monthly charge paid to the elevator or commercial house. On-farm variable costs include insurance on grain, electricity charges, rodent and insect control, quality deterioration, labor, and management charges. In this example, variable costs are paid monthly beginning with the **Storage Start Date**, 10/01/1999. As indicated above, monthly storage fees paid to a commercial house may be delayed until 12/15/1999, or later. In this example, it is assumed that the variable cost for storing grain at the farm is $0.015 per month.

Interest Cost is the foregone interest that could be earned if the grain had been sold at harvest time and the funds were invested in a money market account or were used to pay off loans. The interest charge or cost could be as low as 5% for a money market account or as high as 18% if credit card bills are being paid. In this example, 8% is used. (Enter the percent as a whole number not as a decimal). The computer program multiplies the percentage times the storage start price and determines the cost based on the length of storage time. It is a daily calculation.

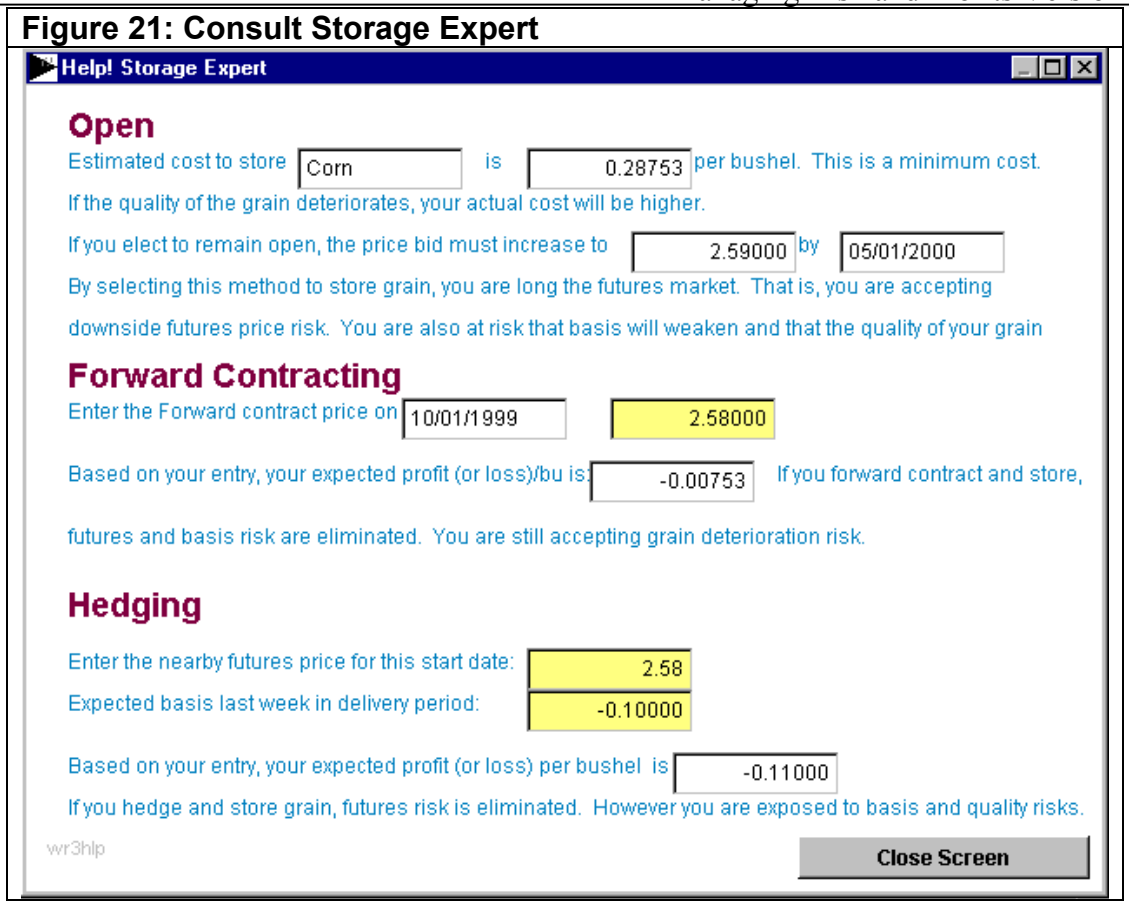
Based on these data entries, the **Net Accumulated Cost** to store 1,200 bushel of corn on the farm from 10/01/1999 to 05/01/2000 is $335.38 or $0.2875 per bushel. To cover these costs, the grain basis improvement plus the any spread must increase by $0.2875 per bushel. Alternatively, the cash bid must increase relative to the **Storage Start Price** by $0.2875. That is, by May 1, 2000 the cash bid must be $2.58 per bushel to cover the storage cost and interest charge. Assume that you may not get $2.58. Let's assume a 2 cent loss in storage. Enter $2.56

Enter the $2.56 in the **Storage End Price** field. Remember that outlook data or localized futures prices can be entered in the **Storage End Price** field in place of the price that is required to cover the cost of storage. The **GRAIN ASSETS** storage data that was entered for storing corn on the Bella Acres Dairy farm can be reviewed by clicking on either **CURRENT LIST** or **COMPUTED TOTALS.** These menu buttons will allow the user to review a summary of the data that has been entered.

Consult Storage Expert

Return to the **GRAIN ASSET** screen as shown in **Figure 20** and use the mouse to select **CONSULT STORAGE EXPERT.** This screen is shown in **Figure 21**. This section is designed to clarify the storage choices, risk exposure, and possible outcomes of storage decisions. The storage expert examines three choices: **OPEN** or a long speculation position, **FORWARD CONTRACTING** (a forward cash price with a commercial house), and **HEDGING** (selling a futures contract or accepting a short futures position with a broker). A One-year non-roll Hedge-to-Arrive data may be entered in the forward contracting or hedging sections. If the basis is set in the non-roll Hedge-to-Arrive, then it is a forward contract. If, on the other hand, the basis is left open, the Hedge-to-Arrive contract includes basis risk and would be entered into the **HEDGE** section.

Figure 21: Consult Storage Expert


Help! Storage Expert
Open
Estimated cost to store
Corn
is
0.28753
per bushel. This is a minimum cost.
If the quality of the grain deteriorates, your actual cost will be higher.
If you elect to remain open, the price bid must increase to
2.59000
by
05/01/2000
By selecting this method to store grain, you are long the futures market. That is, you are accepting
downside futures price risk. You are also at risk that basis will weaken and that the quality of your grain
Forward Contracting
Enter the Forward contract price on
10/01/1999
2.58000
Based on your entry, your expected profit (or loss)/bu is:
-0.00753
If you forward contract and store,
futures and basis risk are eliminated. You are still accepting grain deterioration risk.
Hedging
Enter the nearby futures price for this start date:
2.58
Expected basis last week in delivery period:
-0.10000
Based on your entry, your expected profit (or loss) per bushel is
-0.11000
If you hedge and store grain, futures risk is eliminated. However you are exposed to basis and quality risks.
wr3hlp
Close Screen

In the **OPEN** section, storage cost is summarized ($0.2875) and the break-even price bid is listed ($2.59). The risks that are being assumed also are identified in the **CONSULT STORAGE EXPERT** screen. If a forward contract is a possible marketing alternative, enter the forward contract price in the **Forward Contracting** field. In this example, assume that the local elevator is offering at harvest time a $2.58 forward contract for delivery on May 1, 2000. Based on the cost data, this action would lock in a $0.01 per bushel loss. The signal is (1) either do not forward contract and store corn or (2) find a way to reduce storage cost by at least $0.01 per bushel. The associated risks for each storage option are also identified.

If hedging were an alternative, enter the futures price for the nearby futures month in the **Hedging price** field for this storage end date. Assuming that the nearby futures price on October 1, 1999 is $2.58, enter that price in the price field. In the **Basis** field, enter the expected basis. Assume that the expected basis during the first part of May is -$0.10 or is $0.10 under the futures. Enter this data noting that the expected basis is entered as a negative number including the minus sign. The expected loss for storing corn to May is $0.11/bushel. This loss could be offset if basis strengthens or by reducing storage costs. Close the **STORAGE EXPERT** screen to enter or review the remaining Bella Acres Dairy storage data in the **GRAIN ASSETS** screen.

Farm Storage of Corn and Elevator Storage of Soybeans

To complete this example for Bella Acres Dairy we will review the following data in the **GRAIN ASSETS** screen. This data shows corn stored on the farm and soybeans stored at the elevator. **REMINDER:** If you are entering data into the **GRAIN ASSETS** database remember to click the **ADD** button prior to any data entry.

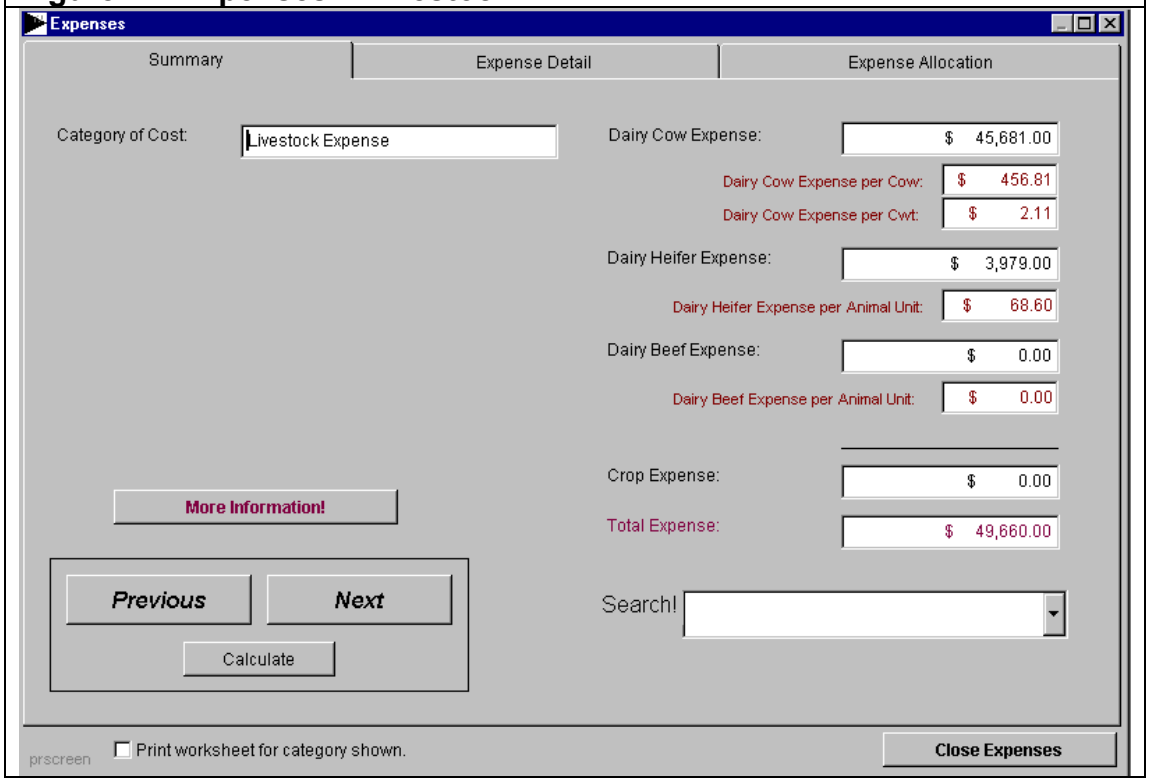
After reviewing this data, review the summaries by clicking on **CURRENT LIST** or **COMPUTED TOTALS.** Use the **NEXT** and **PREVIOUS** buttons to move from screen to screen or from the corn grain asset position to the soybean grain asset position.

Grain	**Corn stored on the farm**	**Soybean stored at the local elevator**
Type	On-farm	Elevator
Start date	10/01/99	10/01/99
Start price	$2.30	$5.20
End Date	05/01/2000	03/01/2000
Storage end price	$2.56	$5.30
Gross Quantity	1,200	4,000
Moisture removed	2%	0%
Shrink	1.4%	0%
Drying cost per 1%	$0.036	$0.036
Base Storage fee (fixed cost)	$0.00	$0.05
Base Storage fee until	Na	03/01/2000
Monthly fee thereafter	$.015	$.04
Interest cost	8%	8%

EXPENSES

To access the **EXPENSES** screens use the mouse to click on the **FARM DATA** label on the main menu (**Figure 1**). The drop-down screen appears and you can use the mouse to select the **EXPENSES** button. Click the **Next** button until you get to **Livestock Expense**. A typical **EXPENSES** screen pops up (**Figure 22**). This screen shows the initial **EXPENSES** screen for **LIVESTOCK EXPENSE**.

Figure 22. Expenses – Livestock



To calculate the total economic and cash-flow cost associated with production and to properly evaluate the value of marketing alternatives, the user must be able to apportion fixed costs to each of the enterprises. Fixed costs are those that are incurred to secure the production output but must be paid even if there is no production. For example, the purchase of a combine is for the purpose of securing grain production. If there was no production certain expenses associated with the combine will still continue. These are fixed costs. In the MRP / Dairy™ program fixed costs are defined for the following accounts:

1. Labor Expenses
2. Land and Buildings
3. Livestock Expenses
4. Living Expenses
5. Machinery Expenses

6. Miscellaneous
7. Payments

Each of the Expense screens has the same structure for entering farm account data. This structure is defined as (1) the opening EXPENSES screen (as shown in **Figure 22**), (2) an EXPENSE DETAIL worksheet as shown in **Figure 23** and (3) an EXPENSE ALLOCATION worksheet as shown in **Figure 24**. Reviewing this structure at this point will help you understand the logic for entering expense data. The overall logic of this section is that the user must know the total expense for each account within a category and also be able to allocate that total across the enterprises on the farm. As this is often a difficult process, the software has been designed to make this task easier. Before we review the operation of these expense screens we need to review the definition of Fixed Cost, Living Expenses, and Payments.

Fixed costs are the costs that must be paid in the short run time period even if output is not produced. If the fixed costs are out of pocket expenses, they are also included in cash flow obligations. See Table 3 to identify those fixed cost items that are included as cash flow obligations and which are not so included.

Living expenses are the cash flow obligations that must be met to support the household. These include such items as food, housing, etc. The living expenses categories are based on the Bureau of Census recording system. Use your historic records or your best estimates to enter the data for each living expense category. If you want to compare your living expenses with averages and standard deviations, data is available from the Bureau of Census.

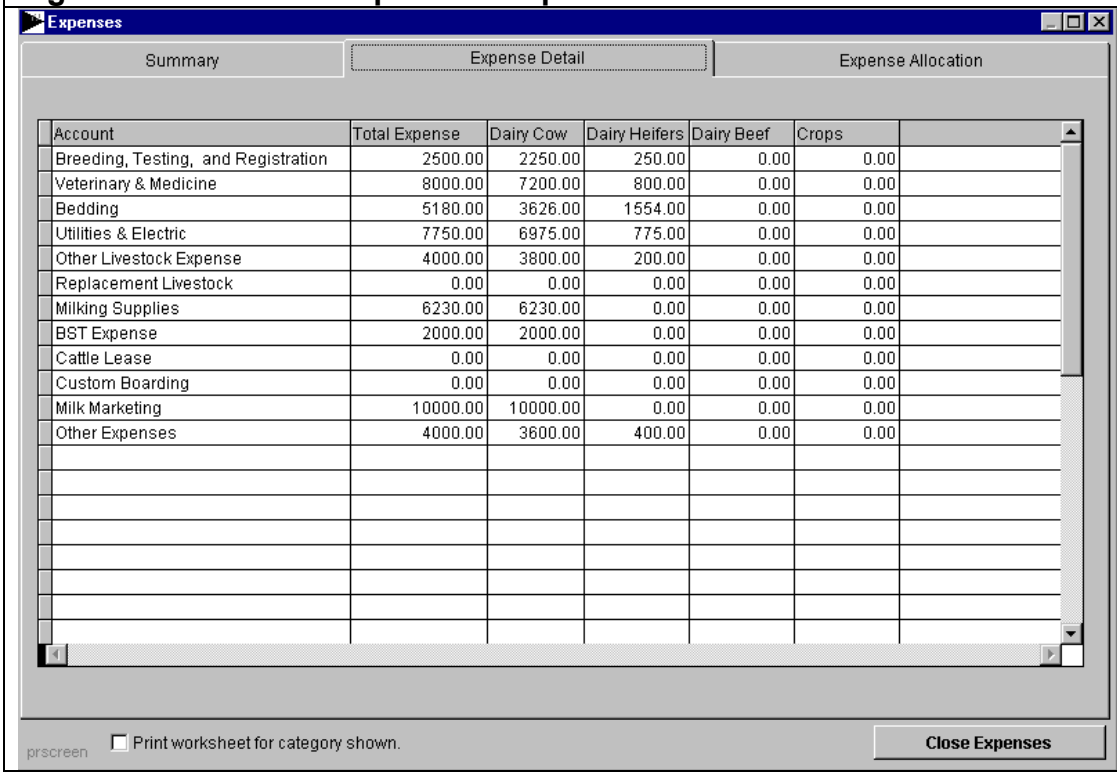
There are two items in the **PAYMENT** section, **Down Payment**, and **Scheduled Principal and Interest Payments** which are not costs but do affect cash flow. **Down payments** on depreciable assets and **Scheduled Principal and Interest Payments** add to cash flow requirements. Payments received for disaster assistance or transition payments such as the **FAIR** payment decrease cash flow obligations. (**FAIR** is an acronym for Federal Agricultural Improvement and Reform Act. Often referred to as the Freedom to Farm Act, this legislation was signed into law in the Spring of 1996. The amount of the **FAIR** payment to farmers will decrease annually and at this writing is scheduled to cease in the year 2002.) Other payments made to the farm or enterprise can be recorded here also. For example, disaster payments made by the USDA can be reported here and will reduce the cash flow needs of the dairy enterprise.

The portion of your fixed costs and living expenses that must be covered by crop and forage enterprises will be allocated by the respective crops based on the percent of acreage that is planted to each crop. Take, for example, a farm with 600 acres in corn, 300 in soybeans, and 200 acres in wheat. Of those expenses allocated to crops in total, 55% will be allocated to corn, 27% to soybeans and 18% to wheat.

Entering data into the **EXPENSE DETAIL** worksheet

After reviewing the expense allocations, the user can access the **EXPENSE DETAIL** worksheet by using the mouse to select the **EXPENSE DETAIL** button. Clicking on this button will bring up the Expense Detail worksheet. This worksheet will list the same account labels as the **EXPENSE ALLOCATION** worksheet. The only entry that the user will make in this worksheet will be in the column with the heading: **TOTAL EXPENSE**. When the total expense for each account has been entered the user can allocate these expenses to each category by pressing the **F2** key. This will take the account percentages as listed in the **EXPENSE ALLOCATION** worksheet and apply these to the total, placing the correct amount in each enterprise category. For example, viewing the Livestock Expense – Expense Detail for Breeding, Testing and Registration shows a total expense of $2,500. This is allocated 90% to Dairy Cow = $2,250 and 10% to Dairy Heifers = $250.00. After all of the total expenses have been entered, pressing **SUMMARY** Tab will return the user to the main expense screen as shown in **Figure 22**. The total expense for each enterprise category is calculated by the MRP / Dairy™ program and reported on this screen.

Figure 23. Livestock Expense – Expense Detail.

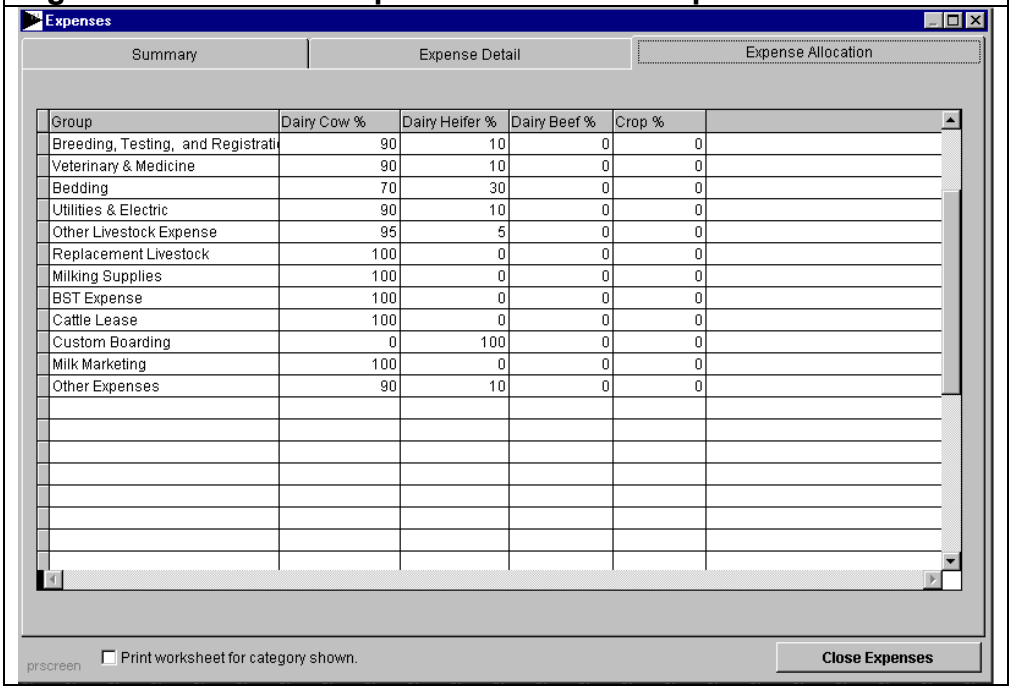


Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Breeding, Testing, and Registration	2500.00	2250.00	250.00	0.00	0.00
Veterinary & Medicine	8000.00	7200.00	800.00	0.00	0.00
Bedding	5180.00	3626.00	1554.00	0.00	0.00
Utilities & Electric	7750.00	6975.00	775.00	0.00	0.00
Other Livestock Expense	4000.00	3800.00	200.00	0.00	0.00
Replacement Livestock	0.00	0.00	0.00	0.00	0.00
Milking Supplies	6230.00	6230.00	0.00	0.00	0.00
BST Expense	2000.00	2000.00	0.00	0.00	0.00
Cattle Lease	0.00	0.00	0.00	0.00	0.00
Custom Boarding	0.00	0.00	0.00	0.00	0.00
Milk Marketing	10000.00	10000.00	0.00	0.00	0.00
Other Expenses	4000.00	3600.00	400.00	0.00	0.00

Entering data into the EXPENSE ALLOCATION worksheet

First, as the MRP / Dairy™ software is supplied to the user, the **EXPENSE ALLOCATION** worksheet will contain default values for each account within each category of expense. These default values represent the "best" management practice percentages. If the user does not have their own values then these default values can be used as supplied. NOTE: if the user overrides these values those supplied with the program will be replaced and MAY ONLY be retrieved if the original database file has been saved on a backup diskette (a highly recommended practice).

Figure 24. Livestock Expenses – Allocate Expenses Worksheet



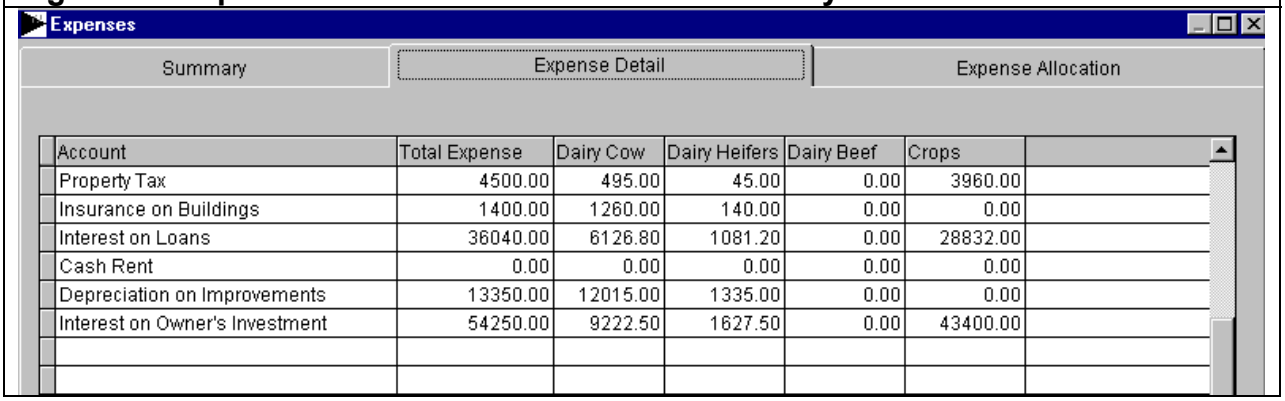
Group	Dairy Cow %	Dairy Heifer %	Dairy Beef %	Crop %
Breeding, Testing, and Registrati	90	10	0	0
Veterinary & Medicine	90	10	0	0
Bedding	70	30	0	0
Utilities & Electric	90	10	0	0
Other Livestock Expense	95	5	0	0
Replacement Livestock	100	0	0	0
Milking Supplies	100	0	0	0
BST Expense	100	0	0	0
Cattle Lease	100	0	0	0
Custom Boarding	0	100	0	0
Milk Marketing	100	0	0	0
Other Expenses	90	10	0	0

A review of the Bella Acres Dairy case farm database shows that the general or overhead expenses for the account - Breeding, Testing and Registration – will be allocated as 90% to Dairy Cow, 10% to Dairy Heifer, and 0% to Dairy Beef (as there is no Dairy Beef enterprise). As another example, BST Expense will be allocated 100% to the Dairy Cow enterprise.

Labor Expenses

The chart of accounts for **LABOR EXPENSES** is shown in **Figure 25**.

Figure 25. Expenses – Labor Detail - Bella Acres Dairy Case Farm



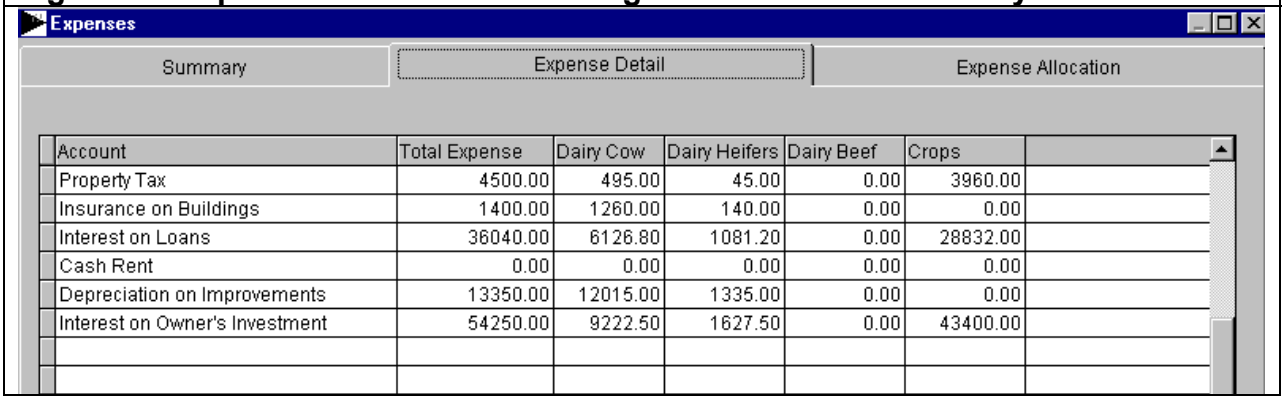
Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Property Tax	4500.00	495.00	45.00	0.00	3960.00
Insurance on Buildings	1400.00	1260.00	140.00	0.00	0.00
Interest on Loans	36040.00	6126.80	1081.20	0.00	28832.00
Cash Rent	0.00	0.00	0.00	0.00	0.00
Depreciation on Improvements	13350.00	12015.00	1335.00	0.00	0.00
Interest on Owner's Investment	54250.00	9222.50	1627.50	0.00	43400.00

Hired Labor Wages Paid is cash flow obligation (Table 3). **Value of Unpaid Labor** is an opportunity cost (wages that could be earned from the next best employment opportunity) and is not included as a cash flow obligation. For Bella Acres Dairy labor costs reflect wages and benefits paid to one full time employee, taxes and Social Security paid for the two operators, plus the opportunity cost of the unpaid labor (Dad and Son).

Land and Building Expenses

Each of the categories is self-explanatory. Except for depreciation on improvements and interest on owner's investments, all other land costs are cash flow obligations (Table 3). Interest on owner's investment is an opportunity cost. It depends upon the estimated rate of return that could be earned from the next best investment.

Figure 26. Expenses – Land and Building Detail - Bella Acres Dairy Case Farm

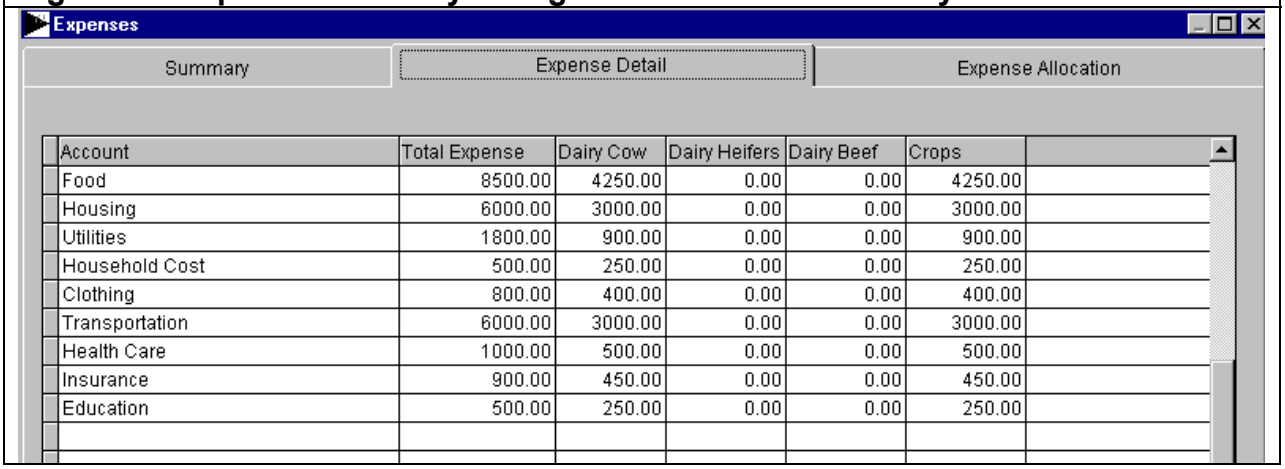


Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Property Tax	4500.00	495.00	45.00	0.00	3960.00
Insurance on Buildings	1400.00	1260.00	140.00	0.00	0.00
Interest on Loans	36040.00	6126.80	1081.20	0.00	28832.00
Cash Rent	0.00	0.00	0.00	0.00	0.00
Depreciation on Improvements	13350.00	12015.00	1335.00	0.00	0.00
Interest on Owner's Investment	54250.00	9222.50	1627.50	0.00	43400.00

Family Living Expenses

The apportioning of living expenses was arbitrarily set at 50% to the dairy cow enterprise and 50% to the crops enterprise. Approximately 75% of the assets are related to the crops enterprises. However, only 25% of the total labor is used by the crop enterprises. Thus, it seemed logical to apportion 50% of the living expenses to the crop enterprises.

Figure 27. Expenses – Family Living Detail - Bella Acres Dairy Case Farm

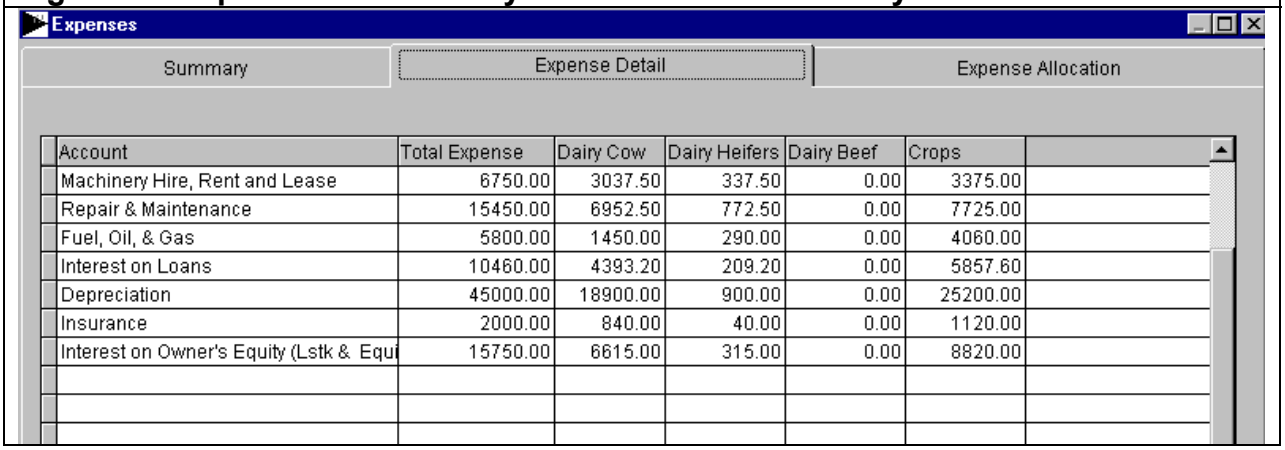


Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Food	8500.00	4250.00	0.00	0.00	4250.00
Housing	6000.00	3000.00	0.00	0.00	3000.00
Utilities	1800.00	900.00	0.00	0.00	900.00
Household Cost	500.00	250.00	0.00	0.00	250.00
Clothing	800.00	400.00	0.00	0.00	400.00
Transportation	6000.00	3000.00	0.00	0.00	3000.00
Health Care	1000.00	500.00	0.00	0.00	500.00
Insurance	900.00	450.00	0.00	0.00	450.00
Education	500.00	250.00	0.00	0.00	250.00

Machinery Expenses

To enter data into the **EXPENSES - Machinery** screen click the **PREVIOUS** button until you get to Machinery. After the Machinery screen appears the user can review the Expense Allocation and/or the Expense Detail for Machinery. **Figure 28** shows the Expense Detail for Bella Acres Dairy.

Figure 28. Expenses – Machinery Detail - Bella Acres Dairy Case Farm



Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Machinery Hire, Rent and Lease	6750.00	3037.50	337.50	0.00	3375.00
Repair & Maintenance	15450.00	6952.50	772.50	0.00	7725.00
Fuel, Oil, & Gas	5800.00	1450.00	290.00	0.00	4060.00
Interest on Loans	10460.00	4393.20	209.20	0.00	5857.60
Depreciation	45000.00	18900.00	900.00	0.00	25200.00
Insurance	2000.00	840.00	40.00	0.00	1120.00
Interest on Owner's Equity (Lstk & Equi	15750.00	6615.00	315.00	0.00	8820.00

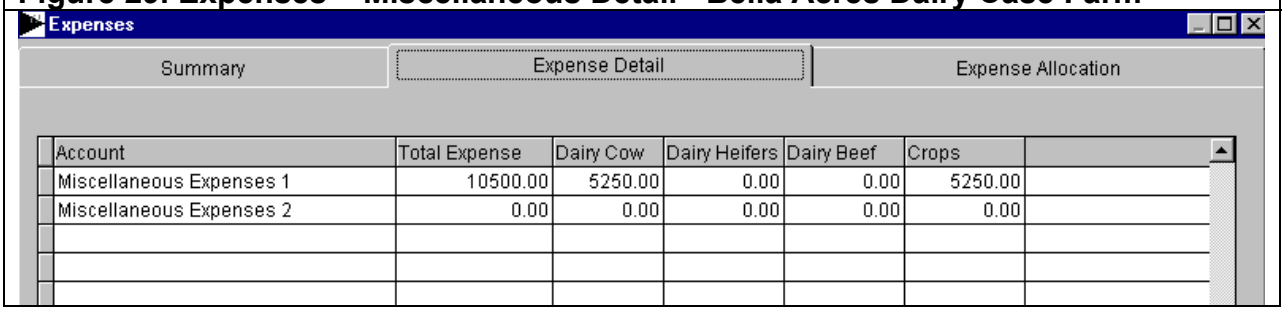
The definitions for most of the types of machinery expenses are self-explanatory. Except for depreciation and interest on owner's equity, all other costs are "out of pocket" expenses and are included in the cash flow (Table 3). By definition, interest on equity is an opportunity cost for the investment in the livestock and machinery. It is not an "out of pocket" cost and is not included in the cash flow.

For the Bella Acres Dairy case farm interest on loans expense is based on an 8%/year lending rate. Interest on owner's equity is calculated at 5% per year to reflect that this interest is realized after income taxes. Furthermore, a significant portion of the owner's equity is generally in the form of unrealized capital gain. Hence, a 5% return on such equity capital investments equates to a 8-10% real, pre-tax rate and is, therefore, appropriate for estimating the opportunity cost of the equity capital.

Miscellaneous Expense

To include all other miscellaneous expenses, click on the **NEXT** button to select the **Miscellaneous** expense category. Miscellaneous expense adds to total cost and to cash flow requirements. Thus, do not put a non-cash flow entry in the miscellaneous expense category. In this example, assume that the Bella Acres Dairy has $10,500 of miscellaneous costs.

Figure 29. Expenses – Miscellaneous Detail - Bella Acres Dairy Case Farm

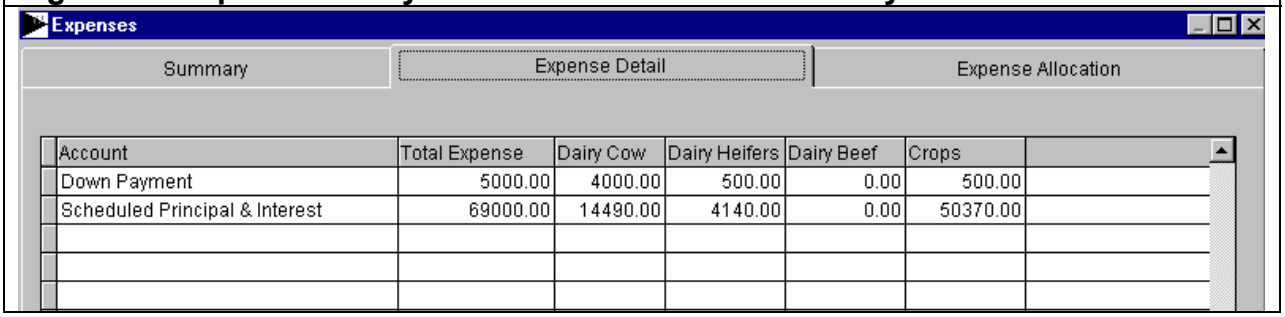


Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Miscellaneous Expenses 1	10500.00	5250.00	0.00	0.00	5250.00
Miscellaneous Expenses 2	0.00	0.00	0.00	0.00	0.00

Payments

To go to the **PAYMENTS** screen select the **NEXT** button and click on it with the mouse. The program will advance from **LIVING EXPENSES** to **PAYMENTS**. At this point the user will enter payment data for their farm. Both the **Down Payment** and **Scheduled Principal Payment & Interest** accounts add to cash flow requirements. For Bella Acres Dairy operation the total **Down Payment** expense of $5,000 is apportioned across the farm enterprises. **Scheduled Principal and Interest** Payments are $69,000.

Figure 30. Expenses – Payments Detail - Bella Acres Dairy Case Farm



Account	Total Expense	Dairy Cow	Dairy Heifers	Dairy Beef	Crops
Down Payment	5000.00	4000.00	500.00	0.00	500.00
Scheduled Principal & Interest	69000.00	14490.00	4140.00	0.00	50370.00

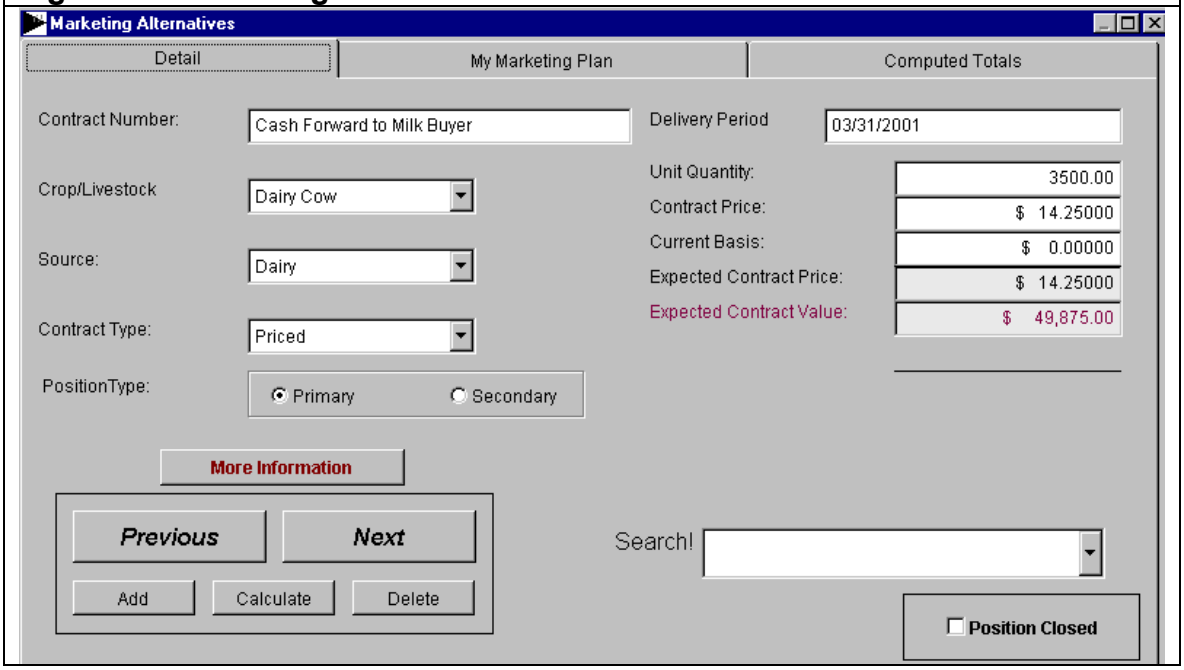
This completes the section of data entry for expenses. After the user has entered the farm data and completed this section the MRP / Dairy™ program will be able to calculate the total economic and total cash flow cost of production for each enterprise. The results of these calculations are displayed in various reports produced under the **PRINT** section of the main program menu.

MARKETING ALTERNATIVES – General Program Use

This section of the MRP / Dairy™ program allows the user to specify a wide range of marketing alternatives for the **OUTPUT** of the enterprises identified on the **FARM ACTIVITIES** screen. **NOTE**: The current release of MRP / Dairy™ is designed to handle the marketing of **OUTPUTS** and **INPUTS.** The current version of the MRP / Dairy™ program will permit the use of long futures or call options positions to hedge positions for purchased feed **INPUTS**.

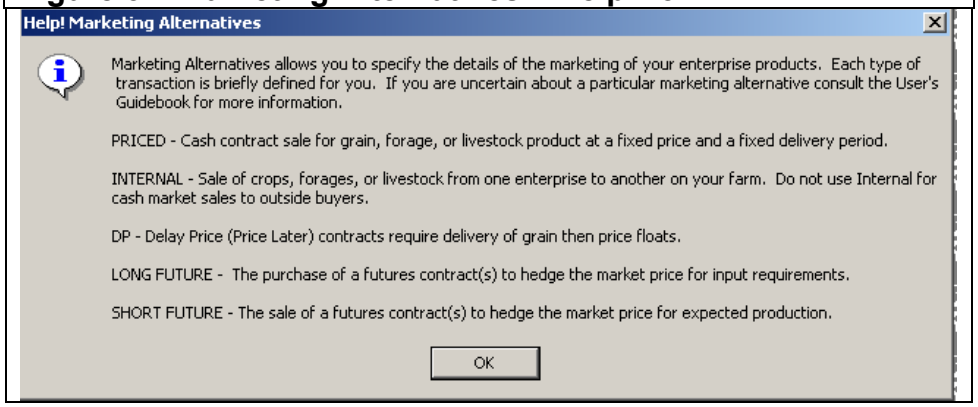
The MRP / Dairy™ program records each of the marketing alternatives and calculates appropriate information such as the average price secured by the combination of the marketing actions. It is important for the user to understand that a key feature of MRP / Dairy™ is the separate calculation for the cash value of an output and the return to marketing that same output. Using the mouse, select **MARKETING ALTERNATIVES** from the **FARM DATA** Pull-down screen.

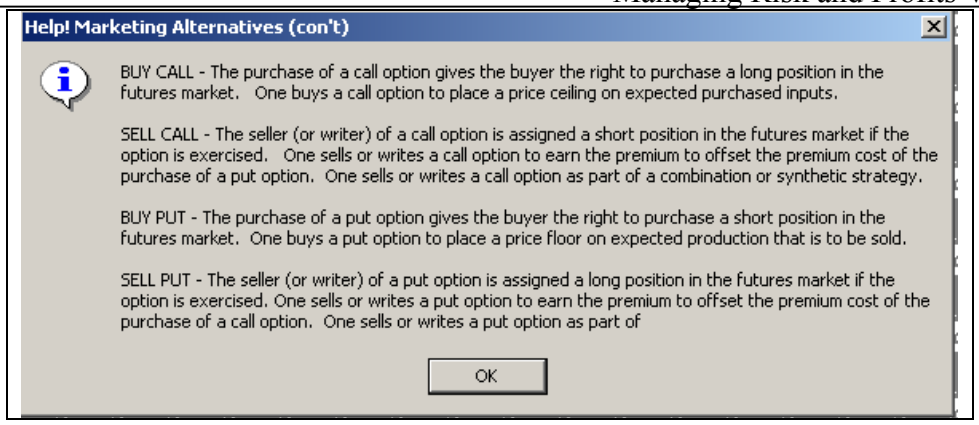
Figure 31. Marketing Alternatives



This screen shown in **Figure 31** allows the user to market new crop, old crop as stored grain, and milk via hedges, options contracts, and cash contracts. Although not advocated, the user can also track speculative marketing by using long futures positions and by buying a call. Buying a call in conjunction with a short hedge, H-T-A, or with a forward contract is recognized as a synthetic put. However, the call is treated as a speculative activity. Returns to all speculative activity are analyzed as speculative profits or losses. The **HELP** button on the **MARKETING ALTERNATIVE** screen is used to define or explain each marketing alternative and is shown in **Figure 32**.

Figure 32. Marketing Alternatives – Help Box


Help! Marketing Alternatives
Marketing Alternatives allows you to specify the details of the marketing of your enterprise products. Each type of transaction is briefly defined for you. If you are uncertain about a particular marketing alternative consult the User's Guidebook for more information.
PRICED - Cash contract sale for grain, forage, or livestock product at a fixed price and a fixed delivery period.
INTERNAL - Sale of crops, forages, or livestock from one enterprise to another on your farm. Do not use Internal for cash market sales to outside buyers.
DP - Delay Price (Price Later) contracts require delivery of grain then price floats.
LONG FUTURE - The purchase of a futures contract(s) to hedge the market price for input requirements.
SHORT FUTURE - The sale of a futures contract(s) to hedge the market price for expected production.
OK


Help! Marketing Alternatives (con't)
BUY CALL - The purchase of a call option gives the buyer the right to purchase a long position in the futures market. One buys a call option to place a price ceiling on expected purchased inputs.
SELL CALL - The seller (or writer) of a call option is assigned a short position in the futures market if the option is exercised. One sells or writes a call option to earn the premium to offset the premium cost of the purchase of a put option. One sells or writes a call option as part of a combination or synthetic strategy.
BUY PUT - The purchase of a put option gives the buyer the right to purchase a short position in the futures market. One buys a put option to place a price floor on expected production that is to be sold.
SELL PUT - The seller (or writer) of a put option is assigned a long position in the futures market if the option is exercised. One sells or writes a put option to earn the premium to offset the premium cost of the purchase of a call option. One sells or writes a put option as part of
OK

For additional information about these marketing alternatives it is recommended that the MRP / Dairy user consult the price risk management sections of the Protecting Your Farm Business through Risk Management Guidebook. Also, an interactive Futures and Options tutorial can be found at the University of Wisconsin website designed for the dairy industry. The Website address is URL **http://www.aae.wisc.edu/future/.**

The operators of Bella Acres Dairy may sell new crops or stored grain via cash or forward sales (**PRICED),** internal contract (**INTERNAL),** short hedge (**SHORT FUTURE**), long futures (**LONG FUTURES**), buy call options (**BUY CALL**), sell call options (**SELL CALL**), buy put options (**BUY PUT**), sell put options (**SELL PUT**), delayed price contracts **(DP),** and basis contracts (**BASIS**).

If a user selects a short hedge or a forward contract and a call, this is a synthetic put. However, the returns from the call are treated as returns to speculation and any gain or loss is not added or subtracted from the price of the grain. The user may elect to sell different quantities of grain via different contracts and at different times.

The MRP / Dairy™ software program tracks these sales, manages the long and short positions, and records income earned. The section of the user manual will review the use of the following marketing alternatives:

1. **Forward Contract (Priced) Sale**
2. **Short Hedged and Put Sales**
3. **Speculation**

Forward Contract (Priced) Sale

Before we begin to review a number of specific examples we will review a number of basic marketing concepts. These marketing concepts apply to any production from any enterprise on the farm that can potentially be sold into a market. First, the forward sale of new crop corn or milk or livestock will reduce the net open or long position for Bella Acres Dairy. A open or long position is one in which the owner of a commodity can experience value increases

or declines based on price increases or declines. A forward contract is beneficial in that it will limit some of the price risk faced by the farm operators. Forward price contracts, short futures or hedges, and put options all are marketing alternatives that reduce the open position.

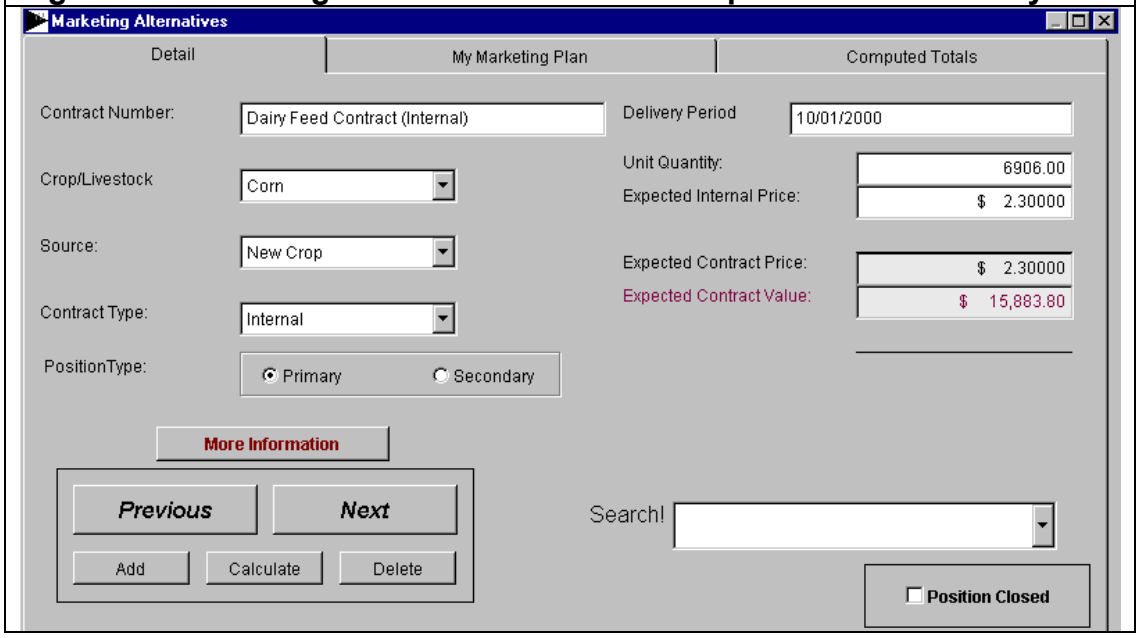
Second, Delayed Price (DP) contracts and Basis contract sales do not reduce the open position, as these contracts are also long open positions. Adding a long futures position or buying a futures contract increases the net open position. Since the call is used to create a synthetic put, it is assumed that buying a call has a neutral effect on the open position. However, the return to the call is considered a return to speculation and is not used to offset production or storage costs.

Also, remember that a long or open position is defined as one in which losses occur when price declines. In most cases, the operators of Bella Acres Dairy are in a long position for milk, whenever grain is stored, whenever grain is sold on DP or basis contract, or whenever grain or forage is growing in the field and a hedge, forward contract, or options position is not in place. Losses occur whenever a marketable commodity of the farm is in a long or open position and prices decline. For example, if corn prices at the time of storage are $1.80 per bushel and later decline to $1.70, the producer loses $0.10 per bushel plus all storage costs. In contrast, a short position is defined as one in which losses occur when prices increase. In most cases, the operators of the farm will not face short risk positions.

With these concepts in mind, we will turn to a number of specific examples of how the **MARKETING ALTERNTATIVES** section of the MRP / Dairy™ program functions. We will begin by proactively marketing surplus corn grain for the Bella Acres Dairy operation. **REMINDER:** Use the mouse to click on the **ADD** button if you wish to start a new record (**Figure 31**). As this information is already entered in the Bella Acres database this is not required.

Grain that is produced by one of the crop or forage enterprises and sold to the livestock enterprise is NOT automatically transferred from the crop long position to the livestock input side. Any crop grain or forage sold to the dairy enterprises will be marketed using the **INTERNAL** contract. This is equivalent to a **PRICED** forward contract with the only difference being the **INTERNAL** transfer, which is automatically recorded on the appropriate grain **RISK POSITION** screen. The price at which the crop grain or forage is sold to the dairy will be taken from the expected market price screen. For example, the operators of Bella Acres Dairy require 6,906 bushels of corn to supply the **DAIRY COW** and **DAIRY HEIFER** enterprises. If this grain will come from new crop then this will be entered as an **INTERNAL** marketing alternative priced at the $2.30 expected harvest price. The price reflects the harvest cash price but not the cost of storage through the feeding period. The storage cost is not a return to marketing corn to the dairy and must be kept separate from the return to the corn enterprise.

Figure 33. Marketing Alternatives – Corn Example Bella Acres Dairy

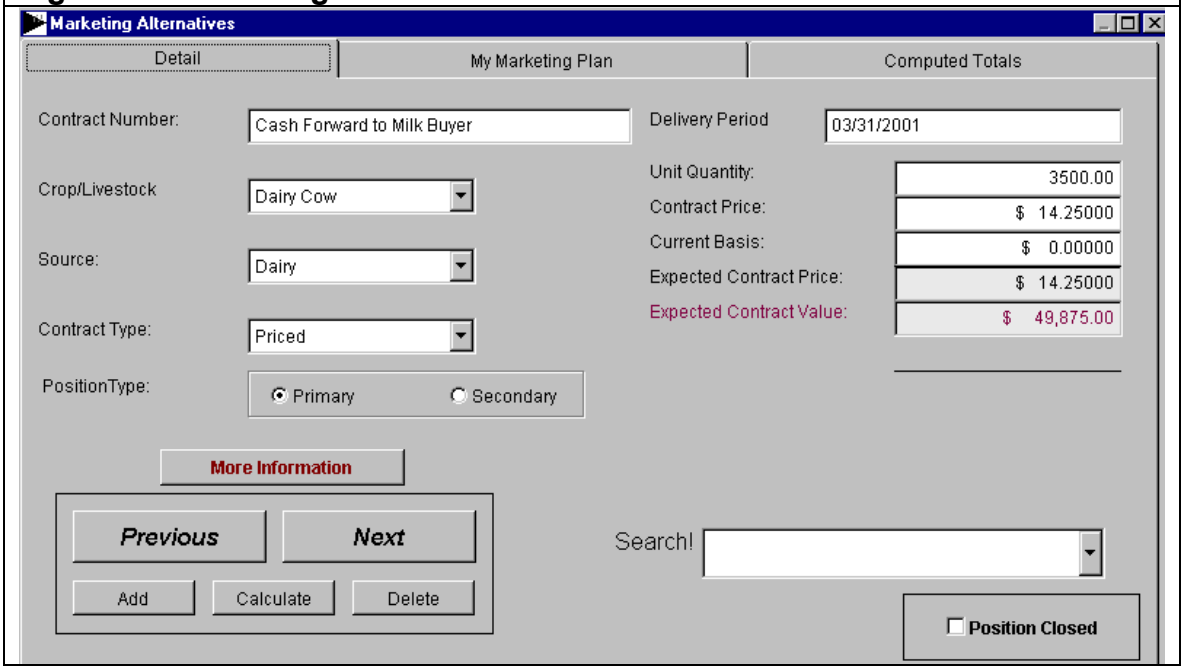


The **Contract Number** field is highlighted at the top left. The contract number could be the order in which grain is sold, the number from the scale ticket, or a forward contract brokerage account number. Next, TAB to the **Crop / Livestock** field. Use the mouse to click on the arrow key, click on **CORN**, and select the Tab key. This highlights the **Source** field. Use the mouse to click on the arrow key, select **NEW CROP,** and touch the tab key. This highlights the **Contract Type** field. Using the mouse, click on **INTERNAL** to forward contract grain for the Bella Acres Dairy. (Note that for the **INTERNAL** selection to appear in the pull-down screen, the user must click on the scroll-down bar on the right-hand side of the pull-down screen). Again, select the tab key to highlight the **Delivery Period** field. Since this is a new crop, enter 10/01/2000. This entry implies that this is a pre-harvest forward contract sale. Yield risks exist in that a crop failure would prevent delivery against this contract. Choices to minimize the added risk associated with this outcome are discussed in the **INSURANCE PRODUCT** section.

Use the Tab key to highlight the **Unit Quantity** field and enter 6,906 bushels. After the **Contract Price** field is highlighted, enter the **INTERNAL** contract price $2.30. The **Net Price** is $2.482 and the **Contract Value** is recorded as $15,883.80. There is no premium or computed cost associated with a forward contract. These data entries are displayed in **Figure 33**. The fields and data entries will change as different marketing alternatives are selected. For example, when hedges are used, basis data requirements, fees, and margin requirements appear.

Figure 34 shows the use of MRP / Dairy™ and the **MARKETING ALTERNATIVES** screen for recording a forward contract on milk.

Figure 34. Marketing Alternatives – Forward Contract Milk



The operators of Bella Acres Dairy will enter into a PRICED contract with their buyer (proprietary or cooperative) for some of the anticipated milk they will produce over the period 01/01/2001 and 03/31/2001. The priced offered is $14.25 per hundredweight and value of the contract is $49,875.00. As the operators of Bella Acres Dairy recognize that they would be increasing production risk if they entered into a contract for 100 percent of their anticipated output they choose to contract for two-thirds or 3,500 hundredweight. The data for this pro-active marketing alternative is show in **Figure 34**.

By entering into a FORWARD or PRICED contract, the operators of Bella Acres Dairy are lessening their price risk but are taking on additional production risk. If they sustain a shortfall in anticipated production they will have to satisfy the contract by purchasing milk on the cash market. This raises an important point about FORWARD or PRICED contracts. By lessening the risk exposure in one area the producer may be increasing risk exposure in another area. The operators of Bella Acres Dairy using a FORWARD or PRICED contractual arrangement must consider this possibility and understand its implications.

Short Hedged and Put Sales

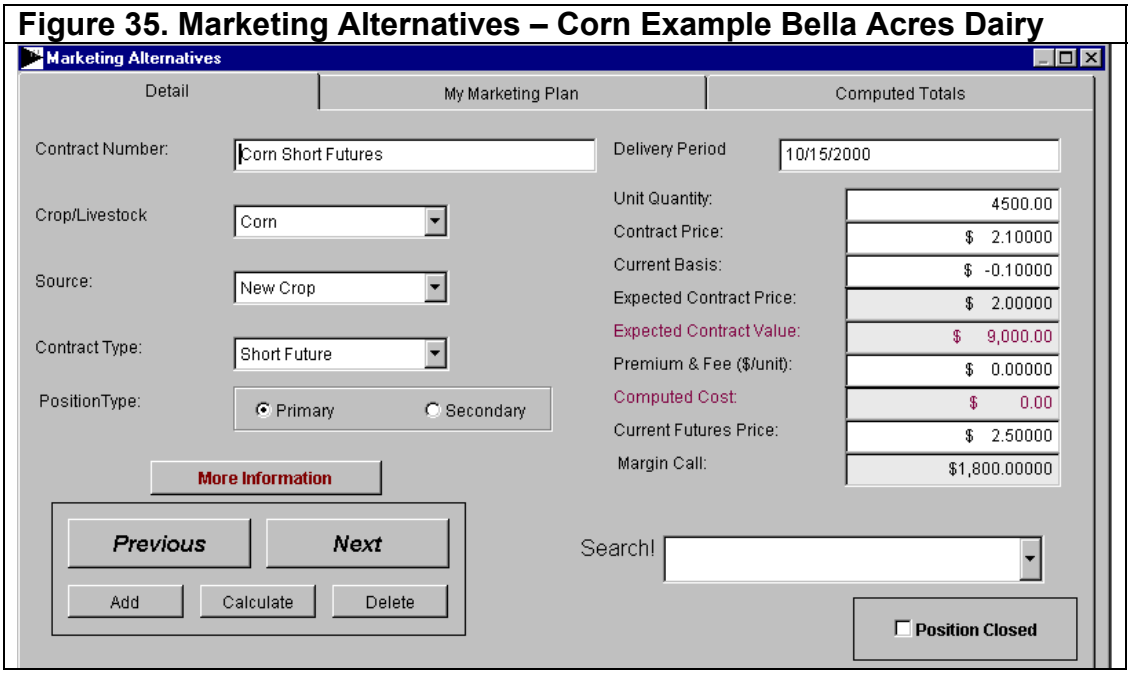
To illustrate the use of the **MARKETING ALTERNATIVES** input screen for short hedged and put sales the user should return to the **MARKETING ALTERNATIVE** screen. Click on the **ADD** button prior to entering data for each **Contract Number** and grain. Observe

the data input requirements change on the **MARKETING ALTERNATIVE** screen as different **CONTRACT TYPES** are selected.

Example of a Short Hedge Position for Grain

As an example, the data for a corn short futures displayed in **Figure 35**. 4500 bushels of corn will be sold as a **Primary** position futures contract at a price of $2.10/bushel. The entry for the **Current Basis** (-$0.10) is the forecast or estimate of the basis at the time the corn will be delivered. The **Expected Contract Price** is $2.00/bushel and the **Expected Contract Value** is $9,000. The **Current Futures Price** is $2.50/bushel. Since the current futures price ($2.50) is higher than the short hedged futures price ($2.10) the **Margin Call** is $1,800.

Figure 35. Marketing Alternatives – Corn Example Bella Acres Dairy



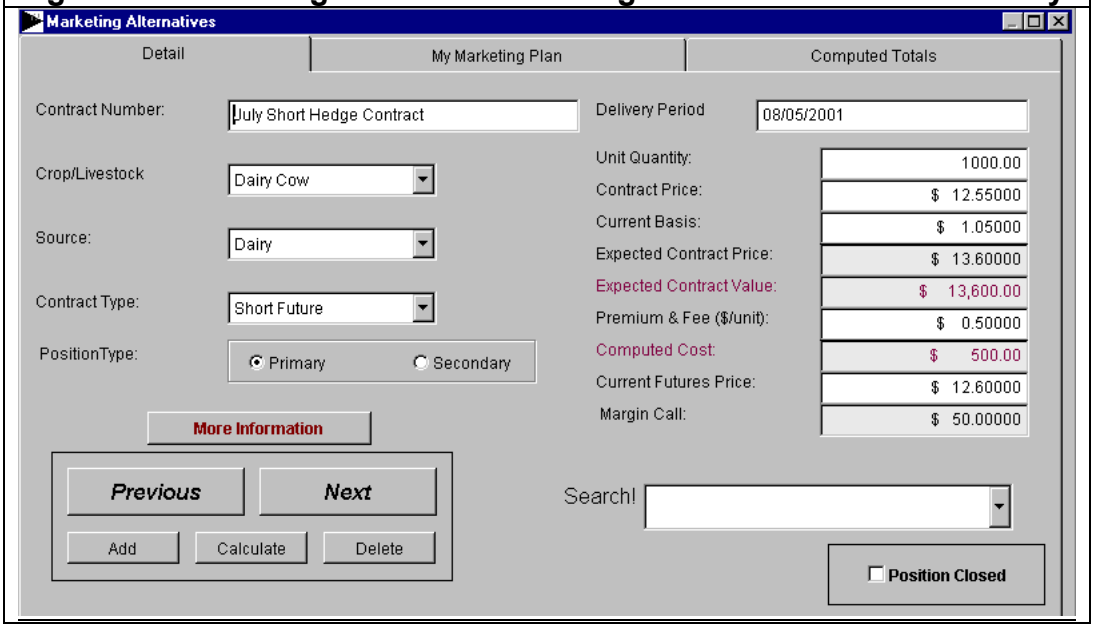
Example of a Short Hedge Position for Milk

Extreme milk price volatility in the U.S. dairy markets has made using either the futures market or the options market as means to reduce price risk a necessity for today's dairy farmer. The following examples provide an illustration as to how a **short hedge position** and **put option position** would be entered in the **MARKETING ALTERNATIVES** input section. NOTE: The following is intended to show the use of the **MARKETING ALTERNATIVES** screen and IS NOT intended as a tutorial on the proper use of the futures or options markets. For a tutorial on futures and options and the dairy producer, the user of MRP / Dairy™ should consult the interactive the risk management papers and the interactive tutorial contained on the MRP /

Dairy™ CD-ROM. This tutorial is located in the Future_Options folder and can be viewed with the internet browser. You can also access the interactive Dairy Futures & Options website at the **University of Wisconsin (http://www.aae.wisc.edu/future/)**

A **Primary** July 2001 short hedge position placed by the operators of Bella Acres Dairy is shown in **Figure 36**. The position is taken on 1,000 cwt. of milk production. The **Contract Price** is $12.55 with an anticipated basis of $1.05. The locked-in **Expected Contract Price** is $13.60. The **Contract Value** is $13,600. The contract will require a **Premium and Fee** of $0.50 per cwt. for a **Computed Cost** of $500. With a **Current Futures Price** of $12.60 the **Margin Call** is calculated as $50.00. As the user updates the **Current Futures Price** field the program will recalculate the required margin call.

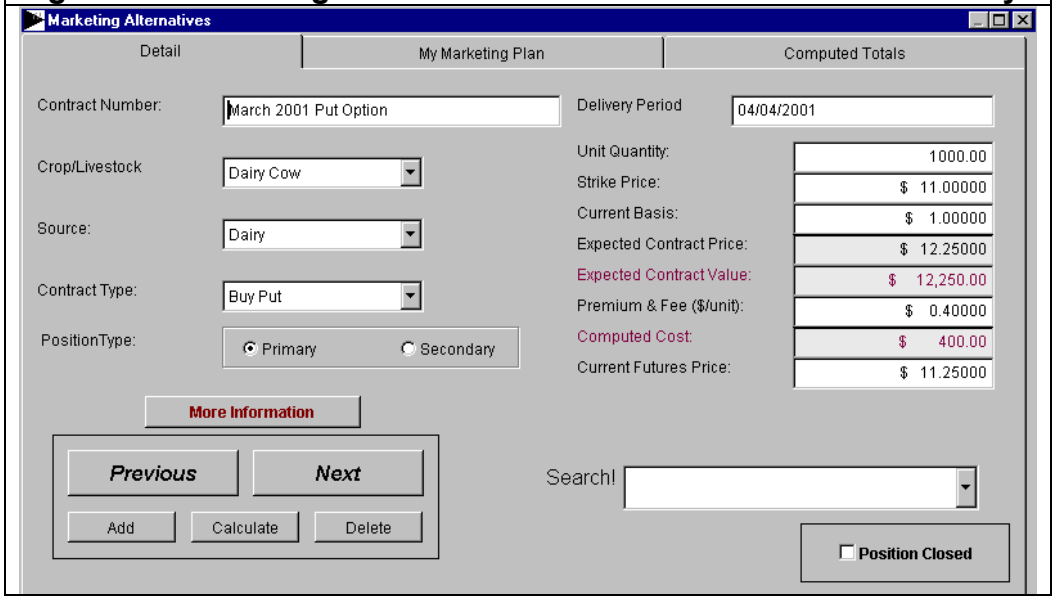
Figure 36. Marketing Alternatives – Hedge on Milk - Bella Acres Dairy



Example of a PUT position

Figure 37 illustrates a proactive marketing action using a PUT. The operators of Bella Acres Dairy decide to place a price floor under the March 2001 milk price by purchasing two PUTs covering 1,000 cwt of March milk output. The **Strike Price** is $11.00. The **Current Basis** is $1.00. The **Current Futures Price** is $11.25 and the **Expected Contract Value** is $12,250. The **Premium and Fee** for this contract is $0.40/cwt at a **Computed Cost** of $400.00.

Figure 37. Marketing Alternatives – Put on Milk - Bella Acres Dairy



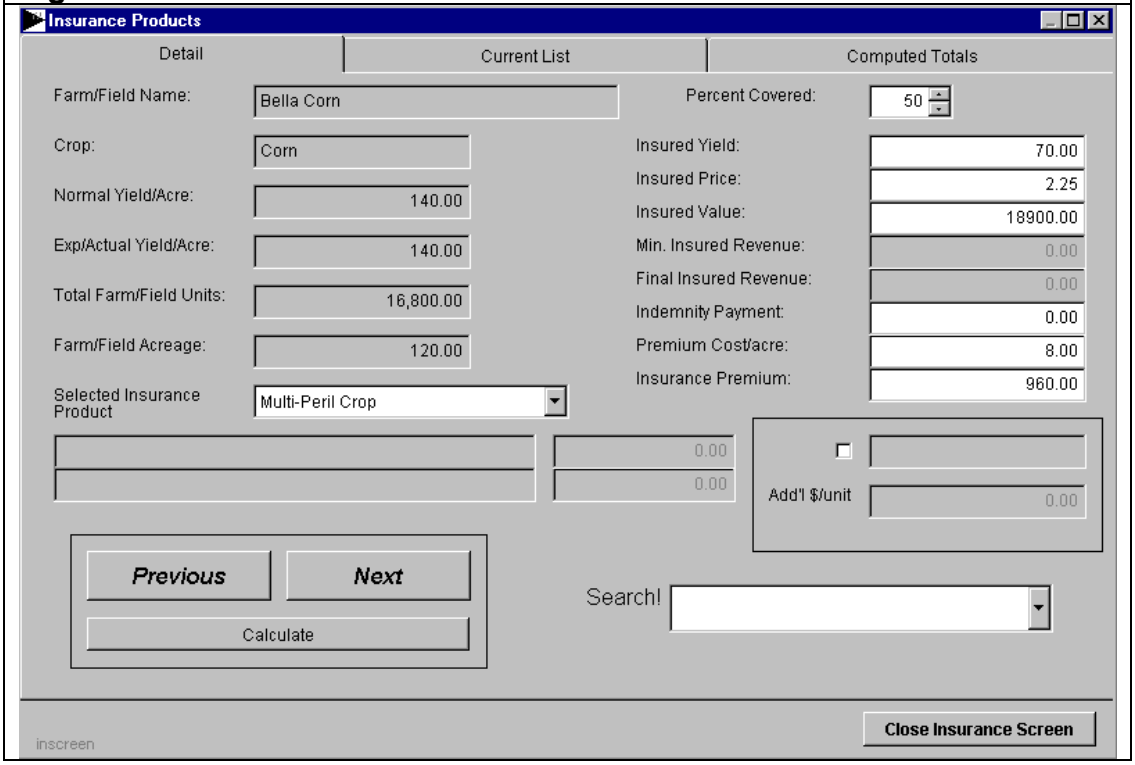
Speculation – An example

Another **MARKETING ALTERNATIVE** that a farmer could consider (although not recommended) consider would be a speculative position using a long futures position or for buying grain on the futures market. The important entries on this screen are the **Contract Price** (price at the time the long position is accepted), **Premium & Fees**, and the **Current Futures Price**. The difference between the **Contract Price** and the **Current Futures Price** determines the profit or loss or the **Margin Call** and **Contract Value**. For example, if the futures price has declined from $2.25 per bushel to $2.00 per bushel this would result in a margin call of $1,250, or a negative contract value or loss of $1,250. The margin requirement and contract value will change with the change in the **Current Futures Price** until the long position is offset.

INSURANCE PRODUCTS

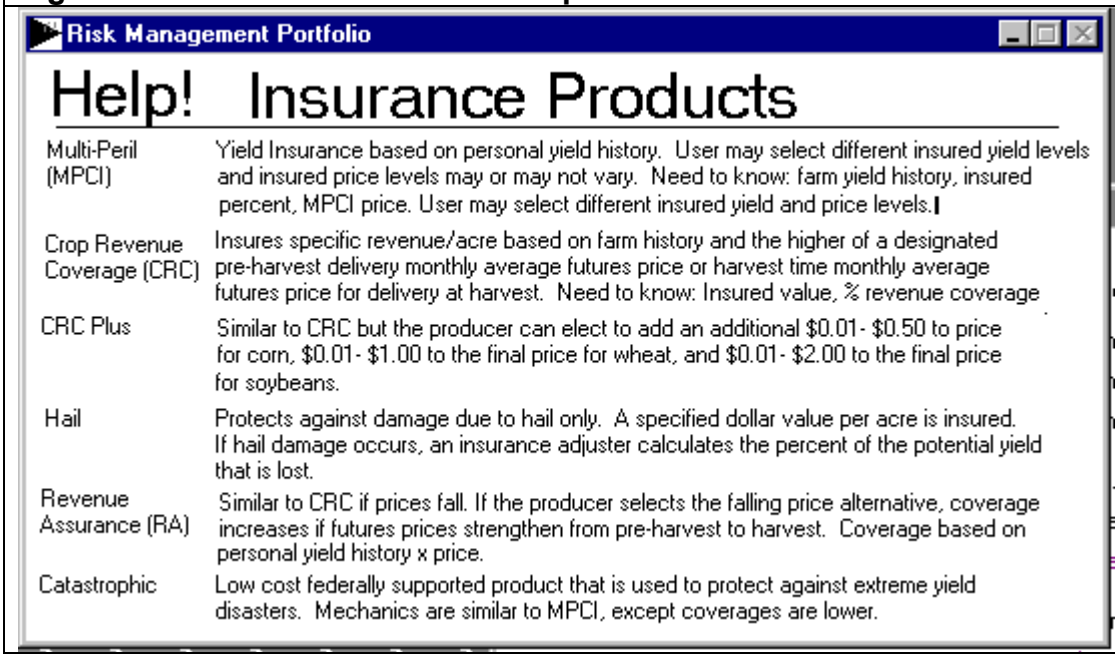
A serious risk facing the farmer with a crop or forage operation is loss of revenue due to a loss of physical crop production. In the MRP / Dairy™ program the **INSURANCE PRODUCTS** selection on the **FARM DATA** menu is designed to address this risk. This screen as shown in **Figure 38** is used to evaluate the potential products available to the farm for offsetting yield or revenue risk. To select alternative insurance products, enter **NONE** in the **SELECTED INSURANCE PRODUCT** field. This clears the screen of all insurance products. Then select an alternative such as **MULTI-PERIL, CROP REVENUE COVERAGE, HAIL, REVENUE ASSURANCE, CATASTROPHIC,** or **OTHER**. With the present software release only one insurance type can be entered at one time. In the next release, hail insurance may be tied to other alternative products. The next release will also include any changes in the insurance products that may be announced for next year.

Figure 38. Insurance Products



Except for Other Insurance, the **HELP** button provides a short description of each of the insurance products and is illustrated in **Figure 39**. The requirements, premiums, and payoff for any **OTHER** insurance product may be specified by the user to reflect unique products that are offered by different insurance companies. In this section, it is assumed that the user will select two types of insurance to protect against yield or income loss for the grain enterprises.

Figure 39. Insurance Products – Help Screen

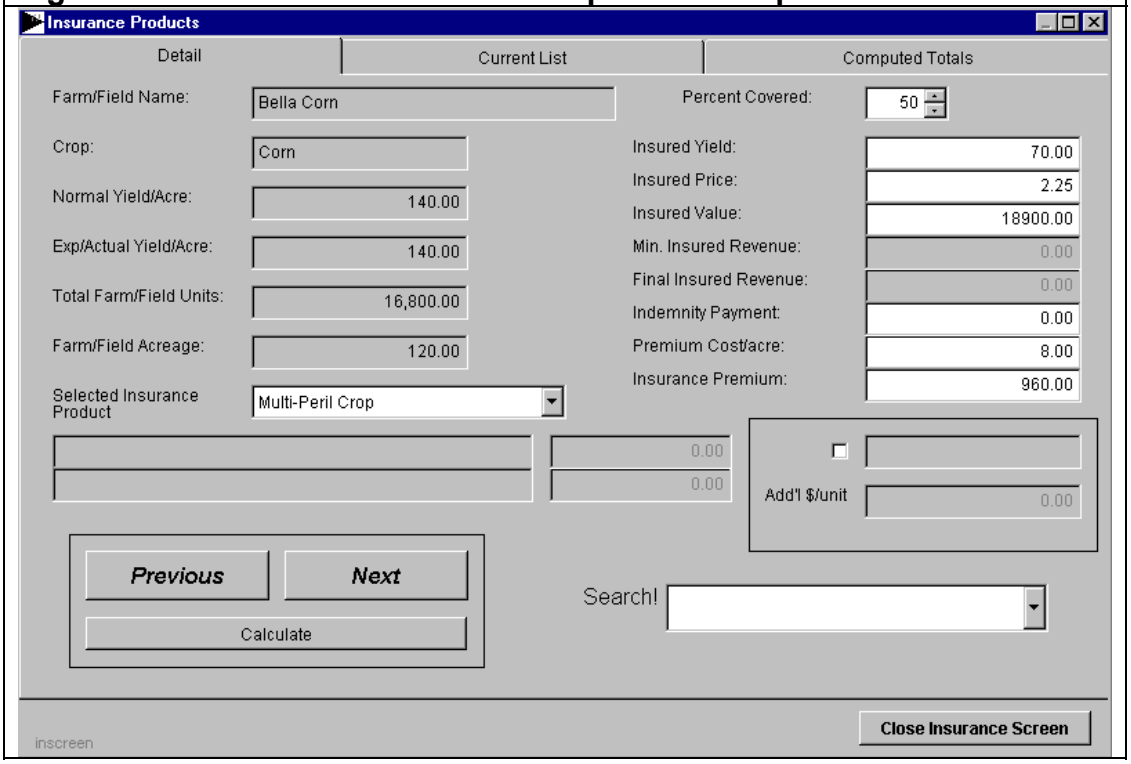

Risk Management Portfolio
Help! Insurance Products
Multi-Peril (MPCI)
Yield Insurance based on personal yield history. User may select different insured yield levels and insured price levels may or may not vary. Need to know: farm yield history, insured percent, MPCI price. User may select different insured yield and price levels.
Crop Revenue Coverage (CRC)
Insures specific revenue/acre based on farm history and the higher of a designated pre-harvest delivery monthly average futures price or harvest time monthly average futures price for delivery at harvest. Need to know: Insured value, % revenue coverage
CRC Plus
Similar to CRC but the producer can elect to add an additional $0.01- $0.50 to price for corn, $0.01- $1.00 to the final price for wheat, and $0.01- $2.00 to the final price for soybeans.
Hail
Protects against damage due to hail only. A specified dollar value per acre is insured. If hail damage occurs, an insurance adjuster calculates the percent of the potential yield that is lost.
Revenue Assurance (RA)
Similar to CRC if prices fall. If the producer selects the falling price alternative, coverage increases if futures prices strengthen from pre-harvest to harvest. Coverage based on personal yield history x price.
Catastrophic
Low cost federally supported product that is used to protect against extreme yield disasters. Mechanics are similar to MPCI, except coverages are lower.

The **NEXT** and **PREVIOUS** buttons are used to shift among grains by farm(s) and field(s). In this example, corn is displayed for the home farm. Soybeans are also displayed for the home farm. Even though the data can be recorded separately for a number of farms or fields, the operators of Bella Acres Dairy must buy the same insurance product for a specific grain for all farms or fields located in the same county. If the operators of Bella Acres Dairy had both owned and rented crop fields and they elect to buy insurance for the corn grown on the home farm, they must also buy a policy for their share of corn produced on rented land that is in the same county. That is, they are not allowed to insure corn on the home farm and not on the rented acres. They do not, however, have to insure corn that is being produced in other counties. Finally, soybeans or other crop enterprises do not have to be insured when corn is insured.

Multiple Peril Crop Insurance

Figure 40 illustrates the data requirements for Bella Acres Dairy and Multiple Peril Crop Insurance. To select an insurance product, use the mouse to click on the arrow in the **Selected Insurance Product** field. Click on **Multiple Peril Crop** insurance. Use the Tab key to highlight the **Percent Covered** field. Clicking on the arrow in this field permits the user to select 50 to 75% coverage. In this example, select 50% coverage and press the Tab key. The **Insured Yield** is 70 bushels or 50% of the Normal yield, 140 bushels. Remember that the normal yield was an entry on the **GRAIN CROP** screen. In the **Insured Price** field, enter $2.25. The MRP / Dairy™ calculates total **Insured Value** as $18,900. Use the Tab key to enter the **Premium Cost/Acre,** $8.00. MRP / Dairy™ calculates the total **Insurance Premium** is $960. Since the expected yield does not reflect a crop failure, the **Indemnity Payment** is not recorded.

Figure 40. Insurance Products – Multiple Peril Crop Insurance



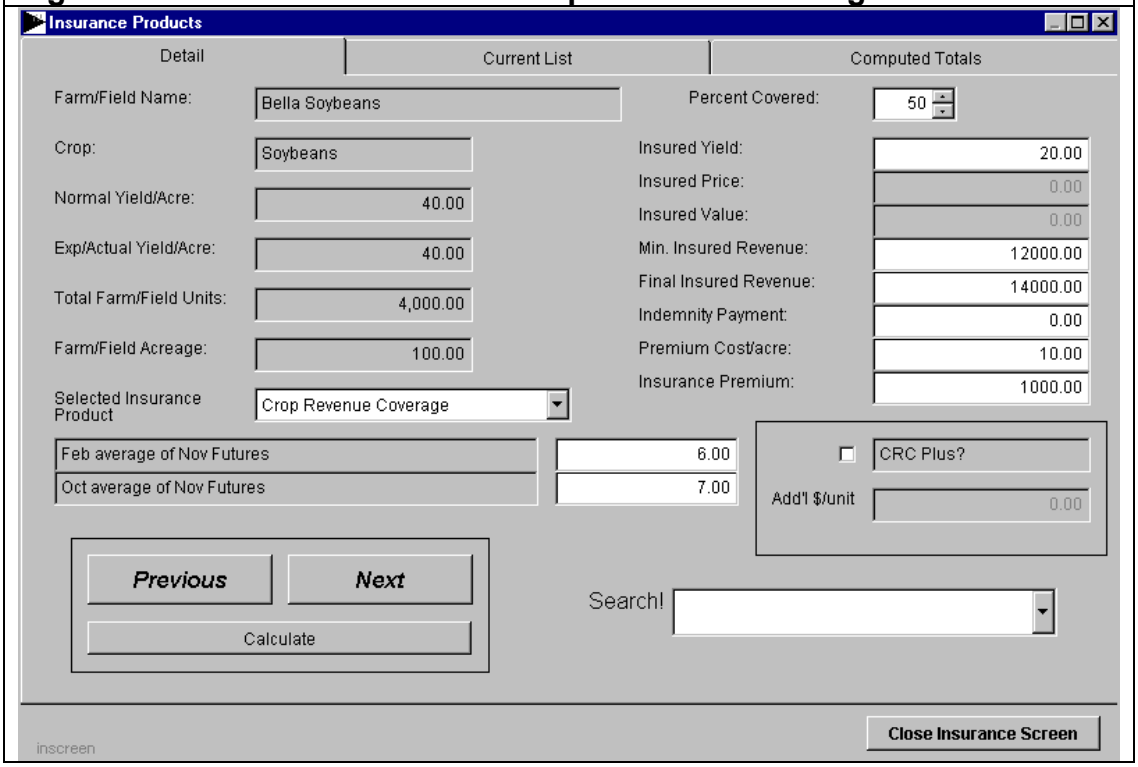
Impact of Corn Crop Failure: Simulation Example

To see the impact of a corn crop failure, return to the **FARM DATA: GRAIN CROP** screen and enter zero (0) in the **Expected Bu. Yield/Acre** field for corn record. Either click on the **CALCULATE** button or use the tab key to tab through all entries on the screen. Return to the **FARM DATA: INSURANCE PRODUCTS** screen and note that the **Indemnity Payment** equals $18,900.00, an amount equal to the **Insured Value** (**Figure 40**). This simulated crop failure will reduce the long corn position. Any grain in storage will offset the new crop short position. If the operators of Bella Acres Dairy elected to use the stored corn to meet their new crop grain delivery obligations, the data that was entered into the **GRAIN ASSET** (storage) section would change. Storage costs would increase as grain would be stored into October of the following year. Alternatively, the operators of Bella Acres Dairy could use the indemnity payment to buy grain to deliver against the forward contract or to meet the obligations of the short position. A third choice is to negotiate with the grain buyer to use the indemnity payment to settle or offset the priced positions. NOTE: return to the **FARM DATA: GRAIN CROP** input screen and enter 140 bushels of corn in the **Expected Bu. Yield/Acre** field. This exercise assumes that there has not been a corn crop failure. Return to the **FARM DATA: INSURANCE PRODUCTS** screen. Observe that indemnity payment is again $0.00 for corn for Bella Acres Dairy.

Crop Revenue Coverage Insurance

Figure 41 illustrates the data entry for **CROP REVENUE COVERAGE** as applied to the Bella Acres Dairy soybean enterprise. To select this insurance coverage the user would click on the **Selected Insurance** field and then select **CROP REVENUE COVERAGE.** Since the crop revenue coverage insurance payout is based upon the higher of two averages, notice that there are two new fields, **Feb. Average Of Nov. Futures** and **Oct. Average Of Nov. Futures**. For soybean, the data entry fields are **Feb. Average Of Nov. Futures** and **Oct. Average Of Nov. Futures.** The entries for these two fields are $6.00 and $7.00 per bushel, respectively. For **Percent Coverage**, enter 50%. For the **Premium Cost/ Acre** enter $10.

Figure 41. Insurance Products – Crop Revenue Coverage Insurance



The **Insured Yield** is 20 bushels per acre and the **Min. Insured Revenue** and the **Final Insured Revenue** equals $12,000 and $14,000 respectively. The total **Insurance Premium** is $1,000. Changing the data in the **Oct Average Of Nov. Futures** field illustrates one of the unique features of Crop Revenue Coverage insurance. That is, this insurance provides a minimum payment if the **Feb. Average Of Nov. Futures** price is equal to or greater than the **Oct. Average Of Nov. Futures** prices. If, in contrast, prices increase and the October average futures prices are greater than the February averages, the final insured revenue is greater than the minimum insured revenue.

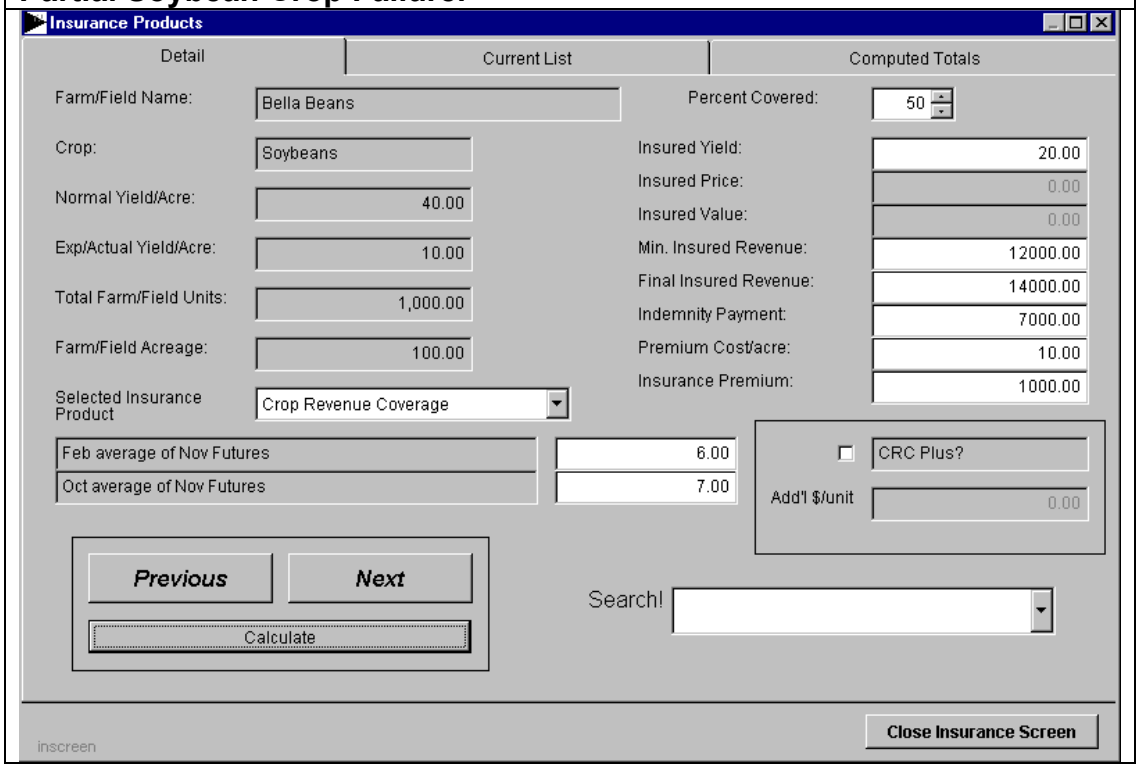
For example, if the user entered $5.00 per bushel in the **Oct. Average Of Nov. Futures** field both the **Min. Insured Revenue** and the **Final Insured Revenue** entries will be equal at $10,000. Since the average for the November futures prices was higher in February than in October, the coverage is based on February prices. Entering $7.00 per bushel in the **Oct. Average Of Nov. Futures** field results in an increase in the **Final Insured Revenue** field equaling $14,000.

The **Final Insured Value** is greater than the **Minimum Insured Value** because futures prices averaged more in October than they did in February. Whether a producer elects to use Crop Revenue Coverage insurance will depend upon the correlation between crop failure and prices. If prices increase for this farmer when a crop failure occurs, then the payout from this insurance may more than offset the additional cost of the premium. If, on the other hand, the correlation between a crop failure and price levels is low, other types of insurance may be more beneficial.

Partial Soybean Crop Failure – Simulated Example

To complete this illustration of the use of the **INSURANCE PRODUCTS** menu, it is assumed that futures prices in February average $6.00 per bushel and in October futures prices average $7.00 per bushel. Therefore, the **Final Insured Revenue** is $14,000 (**Figure 41**).

Figure 42. Insurance Products – Crop Revenue Coverage Insurance Partial Soybean Crop Failure.

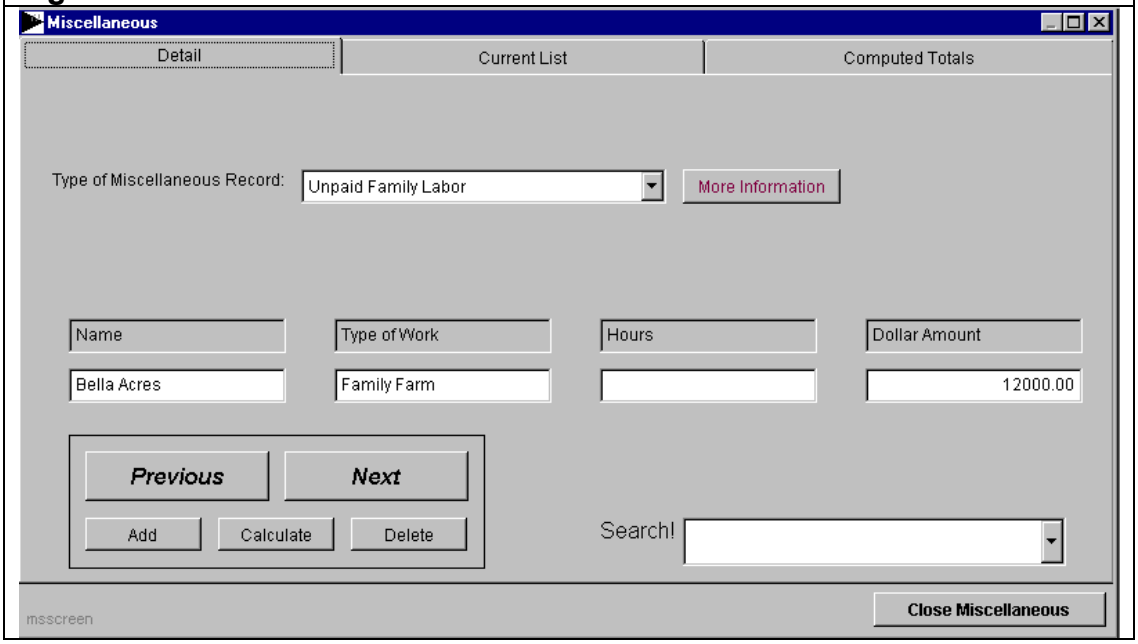


Now assume that there was a soybean crop failure which reduced the expected yield from 40 bushels to the acre down to 10 bushels to the acre actual yield. MRP / Dairy™ can quite easily show the operators of Bella Acres Dairy the impact of these yield risk events occurring. To do so, return to the **FARM DATA: GRAIN CROP** input screen and on the Bella Acres Dairy – Soybean record change the **Expected Bu. Yield/Acre** field to reflect 10 bushels per acre (Note the previous entry was 40 bushels). Observe that the soybean production for Bella Acres Dairy will be only 1,000 bushels of soybeans. Next, exit this screen and return to the **FARM DATA: INSURANCE PRODUCTS** screen. Based on the $7.00 per bushel October average futures price, 50% coverage on the normal yield of 40 bushels / acre, and the actual yield of 10 bushel per acre, the operators of Bella Acres Dairy would receive a $7,000 indemnity payment (1,000 bushels x $7.00 / bushel) as shown in **Figure 42**.

MISCELLANEOUS RECORDS

To access the **MISCELLANEOUS** screen click **FARM DATA** and then click **MISCELLANEOUS**. This screen is used to enter miscellaneous records relating to the farm's financial position and is shown in **Figure 43**.

Figure 43. Miscellaneous Records



Notice the **Type Of Miscellaneous Record** field is highlighted. The user can use the mouse to click on the arrow key to get the pull-down screen. **Non-Farm Income**, **Down Payments/Cash Capital**, and **Unpaid Family Labor** are the three categories are entered here. Bella Acres has the following Miscellaneous Records: **Non-Farm Income: $34,000; Down Payments/Cash Capital: $7500**; and **Unpaid Family Labor: $12,000.** These three records are added by using the **Add** button and tabbing from **Type Of Miscellaneous Record**, to **Name**, to

Type of Work, to **Hours**, to **Dollar Amount.** The record shown above is the **Unpaid Family Labor**. For each records entered click the **Calculate** button. Once all records are entered you can use the ***Previous*** and ***Next*** buttons to review the records.

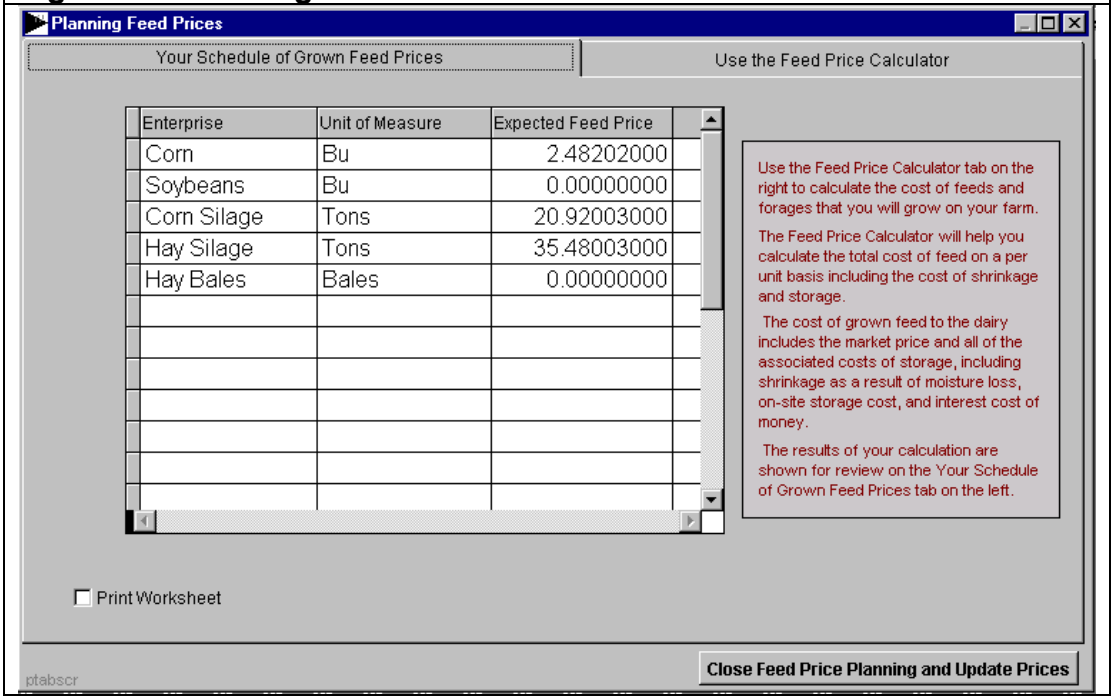
EXPECTED PRICES

The final items to be completed are the (1) **PLANNING FEED PRICES** screen and the (2) **EXPECTED MARKET PRICES** screen. Click the **PRICES** button on the main control screen to get to these screens. This is a very important part of the MRP / Dairy™ software program. The data that is entered here is used to cash value the individual grain and forage crops and the grown feeds for the livestock enterprises and the expected products to be marketed. The expected cash market price for dairy heifers that are purchased by the dairy and or sold by the heifer enterprise, and any dairy beef that are sold in the market are also entered on this screen.

Planning Feed Prices

Figure 44 shows the **PLANNING FEED PRICES** screen. Reviewing the entries shows the following prices that have been entered for Bella Acres Dairy case farm.

Figure 44. Planning Feed Prices


Planning Feed Prices
Your Schedule of Grown Feed Prices
Use the Feed Price Calculator
Enterprise
Unit of Measure
Expected Feed Price
Corn
Bu
2.48202000
Soybeans
Bu
0.00000000
Corn Silage
Tons
20.92003000
Hay Silage
Tons
35.48003000
Hay Bales
Bales
0.00000000
Use the Feed Price Calculator tab on the right to calculate the cost of feeds and forages that you will grow on your farm.
The Feed Price Calculator will help you calculate the total cost of feed on a per unit basis including the cost of shrinkage and storage.
The cost of grown feed to the dairy includes the market price and all of the associated costs of storage, including shrinkage as a result of moisture loss, on-site storage cost, and interest cost of money.
The results of your calculation are shown for review on the Your Schedule of Grown Feed Prices tab on the left.
Print Worksheet
ptabscr
Close Feed Price Planning and Update Prices

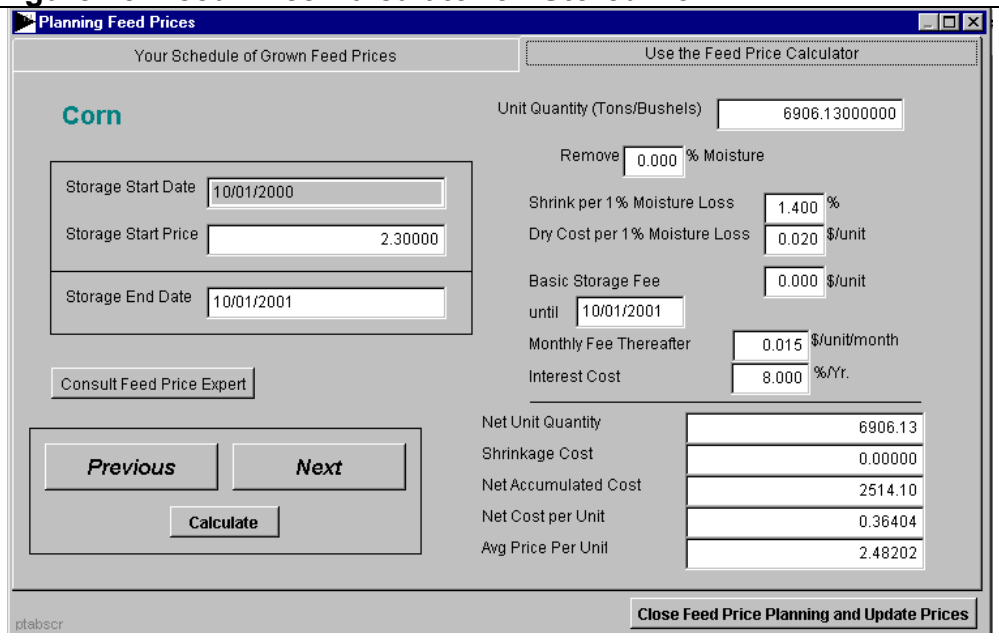
When the dairy enterprise purchases grown feed from the crop enterprise, that grain is moved into on-farm storage and will incur a storage cost. This storage cost is comprised of a variable cost per bushel or ton plus the foregone opportunity cost of the dollars used to purchase the feed. These costs can be difficult for a farmer to calculate but MRP / Dairy™ includes a

calculator for just that purpose. If the Expected Price Calculator is not used, then the entries in the Expected Prices screen will that determine cash market values throughout the MRP / Dairy™ software program. A note of caution is warranted at this point. Prices transferred from the **EXPECTED PRICES** screen are used throughout the MRP / Dairy™ program. The user must be sure that the prices entered in this screen are as accurate as possible and do not contain entry mistakes.

Feed Price Calculator

Clicking on the **FEED PRICE CALCULATOR** button on the **PLANNING FEED PRICES** screen accesses the feed price calculator. This screen is shown in **Figure 45**. The Feed Price Calculator allows the user to enter a storage start date, start price, storage end date, quantity of feed being stored, moisture reduction (aside from normal shrink) and storage fees and interest cost. In **Figure 45** the data for Bella Acres Dairy shows that for corn the harvest or start price of $2.30 after all storage fees and opportunity costs are calculated becomes $2.482 per bushel. This is the actual cost to the dairy of buying corn as feed from the crop enterprise and feeding it to the dairy cow enterprise. The accumulated cost of storing the corn feed requirement of 6,906 bushels is one-half of $2,514.10 or $1,257.05. (*NOTE: In the MRP / Dairy™ program it is assumed that the feed disappears at an equal rate per day and therefore the storage cost decline such that the total cost is only ½ of the gross cost over the storage period.*) In **Figure 45** the Net Cost Per Unit is $0.364. The logic in the program is that feed will flow out of storage at a uniform rate, therefore the actual amount that is added to the price per bushel of corn is only one-half or $0.182 per bushel. The operators of Bella Acres now can see that corn priced at $2.30 plus storage of $0.182 will result in a corn feed expense of $2.482 per bushel.

Figure 45. Feed Price Calculator on Stored Corn



All the entries shown in the **PLANNING FEED PRICES** screen can be seen in the **FEED PRICE CALCULATOR** by clicking the ***NEXT*** and ***PREVIOUS*** buttons.

Expected Market Prices

The operators of Bella Acres Dairy need to specify the various expected market prices for their production. These prices are entered into the **EXPECTED MARKET PRICES** screen. These prices are the ones that are used to value any open commodity. An open commodity is one that has not been actively priced using a marketing alternative. These prices can be the same as those entered into the **EXPECTED FEED PRICES** screen, however this will typically not be the case. The **EXPECTED MARKET PRICES** screen is shown in **Figure 46**.

Figure 46. Expected Market Prices

The operators of Bella Acres Dairy have reviewed the current market price information and are expecting the following market prices for the commodities produced and sold off the farm. Milk - $12.56, Replacement Dairy Heifers - $1525.00, Corn - $2.30, Soybeans - $5.20, Corn Silage $20.00, Hay Silage $40.00, Hay Bales – $110.00. Note: for milk the expected market price of $12.56 is the anticipated average mailbox price.

Pricing Grain / Forage and Livestock Product in MRP / Dairy™

The user of MRP / Dairy™ should understand how commodities are priced within the MRP program. There are three separate opportunities to establish expected market prices for a commodity when using MRP / Dairy™. These are: (1) New Crop / Forage; (2) Old Crop / Forage, either in storage on farm, or in commercial storage; (3) expected livestock and feed prices. We will review the use of each and provide an example.

New Grain Crops / Forages: As MRP / Dairy™ is a planning tool, the producer will need to establish an expected price that will value the crop at the next harvest period. For example, the operators of Bella Acres Dairy have 120 acres of corn they are planning to produce and harvest next crop year. They are anticipating 140 bushel / acre for a total anticipated production of 16,800 bushels. At harvest time next year they expect the cash price to be 2.30 per bushel. This expected price is entered into MRP / Dairy™ using the **EXPECTED MARKET PRICES** screen, **Figure 46**. It is important to remember that the **EXPECTED MARKET PRICES** screen records cash sale prices. These **EXPECTED MARKET PRICES** are used to value any open commodity that has not been priced using the **MARKETING ALTERNATIVES** input screen.

New Grain Crops / Forages used in Feeding: The price(s) for crops and forages that are used in an on-farm feeding enterprise are recorded using the **PLANNING FEED PRICE** screen. **NOTE:** if a user is purchasing a particular feed, such as corn or corn silage from an outside source, then the price for this feed is recorded using the **PURCHASED FEED PLAN** screens and **NOT** the **EXPECTED FEED PRICES** screen.

As an example, the operators of Bella Acres Dairy are growing and feeding corn to the dairy and the heifer enterprises. If some of this corn is to come out of next years new crop then the expected cash price at harvest is entered using the **PLANNING FEED PRICE** screen and the **FEED PRICE CALCULATOR**. The **FEED PRICE CALCULATOR** is used to reflect the cost of storage to the dairy and heifer enterprises in the valuation of the new crop grain or forage. This cost of storage is allocated to the appropriate livestock enterprise and **NOT** to the grain crop or forage enterprise. For Bella Acres Dairy the new crop corn enterprise will supply 6,907 bushels of corn to both the dairy cow and dairy heifer enterprises. This corn will be priced are the next harvest price plus the cost of storage. This is $2.30 plus $0.182 for a total of $2.482 per bushel.

Old crop / forages: If the farm business is carrying over grain crop or forages from a previous harvest, the prices for these are recorded using the **GRAIN ASSETS** screen. Old crop is priced at the old crop harvest cash price plus the cost of storage until either marketed or sold on the cash market.

RISK AND PROFIT POSITION

Up to this point the user has been entering data encompasses the production, expense, inventory, marketing, insurance and expected price structure of the farm. This information is collected and summarized in a series of reports that are designed to show as clearly as possible the relative economic risk exposure for the farm. These reports can be located on the main menu of MRP / Dairy™ under the heading **MY RISK** and **MY PROFIT.**

To view the summary of the production risk and cost data, use the mouse to click on the **MY RISK** button on the main Menu. A pull-down screen is revealed and includes **DAIRY HEIFER**, **GRAIN**, and **FORAGE (Figure 47)**. Whole Farm Financial Reports are shown in **MY PROFIT.** A pull-down screen is revealed and includes **PROJECTED CASH FLOW FROM OPERATIONS**, **PROJECTED CASH FLOW RISK RATIO**, and **PROFITABILITY (Figure 48).**

Figure 47. MY RISK Menu

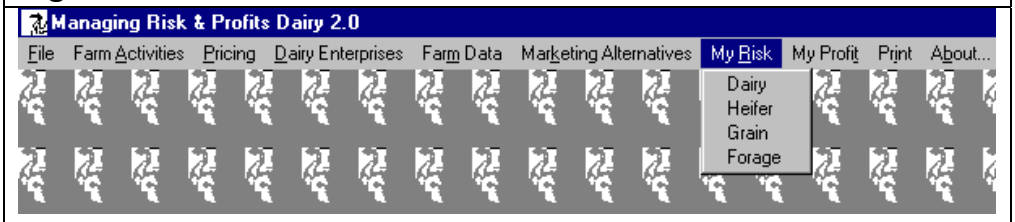
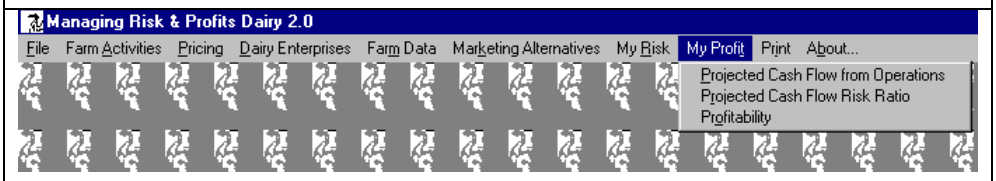


Figure 48. MY PROFIT menu

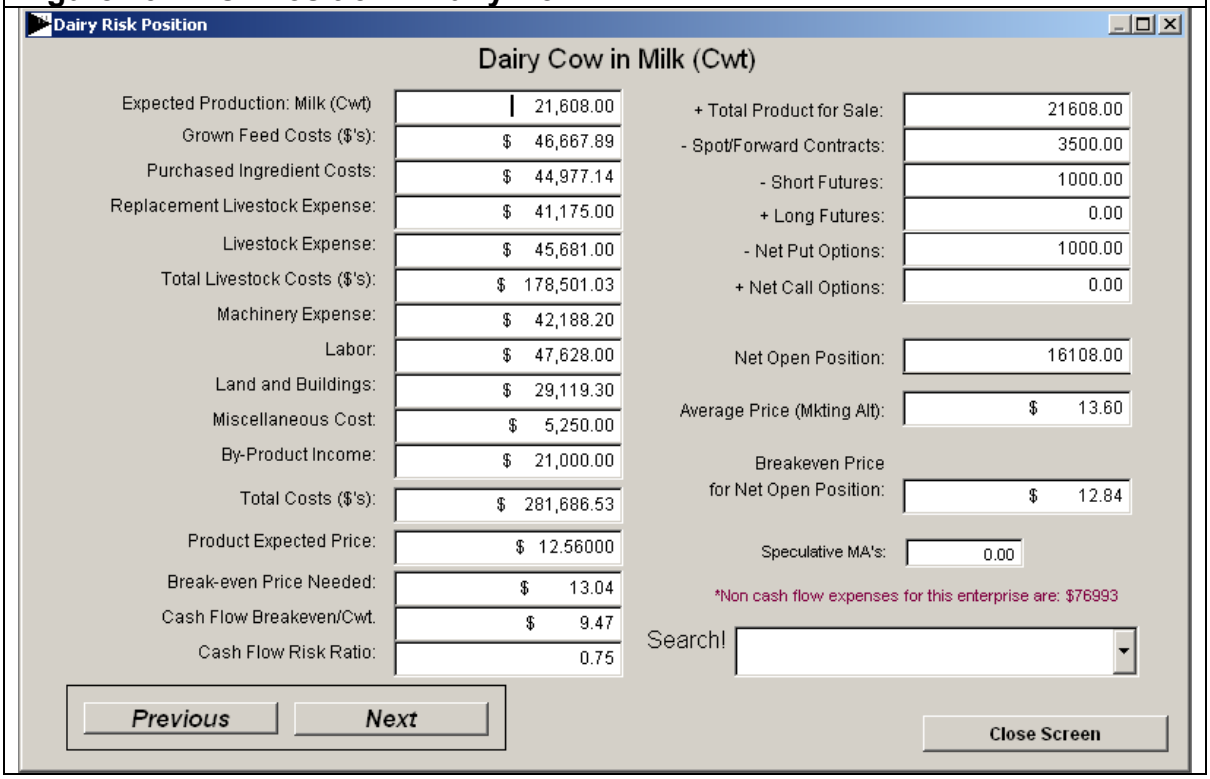


The **MY RISK** screens are designed to provide a complete summary of the production, cost, and marketing position of the farm. For each of the enterprises selected by the user there will be a **RISK POSITION** screen produced from the data entered under the **MY RISK** menu. All of the **RISK POSITION** screens contain the same data fields and carry the same interpretation with the exception of the **DAIRY HEIFER RISK POSITION** screen. The **DAIRY HEIFER RISK POSITION** screen does not contain the same marketing fields and functions more as a way of providing information on the cost of producing a dairy heifer.

Risk Position: DAIRY COW

In this section we will examine the risk position screen for **DAIRY**. In this example, Bella Acres Dairy expects to produce 21,608 cwt. of milk over the next year. Because of the perishable quality of milk there is no inventory fields as there is with grains.

Figure 49. Risk Position – Dairy Cow


Dairy Risk Position
Dairy Cow in Milk (Cwt)
Expected Production: Milk (Cwt) 21,608.00
Grown Feed Costs ($'s): $ 46,667.89
Purchased Ingredient Costs: $ 44,977.14
Replacement Livestock Expense: $ 41,175.00
Livestock Expense: $ 45,681.00
Total Livestock Costs ($'s): $ 178,501.03
Machinery Expense: $ 42,188.20
Labor: $ 47,628.00
Land and Buildings: $ 29,119.30
Miscellaneous Cost: $ 5,250.00
By-Product Income: $ 21,000.00
Total Costs ($'s): $ 281,686.53
Product Expected Price: $ 12.56000
Break-even Price Needed: $ 13.04
Cash Flow Breakeven/Cwt. $ 9.47
Cash Flow Risk Ratio: 0.75
+ Total Product for Sale: 21608.00
- Spot/Forward Contracts: 3500.00
- Short Futures: 1000.00
+ Long Futures: 0.00
- Net Put Options: 1000.00
+ Net Call Options: 0.00
Net Open Position: 16108.00
Average Price (Mkting Alt): $ 13.60
Breakeven Price for Net Open Position: $ 12.84
Speculative MA's: 0.00
*Non cash flow expenses for this enterprise are: $76993
Search!
Previous
Next
Close Screen

The left panel of the **RISK POSITION** screen for **DAIRY** was discussed in the Bella Acres Dairy case farm write-up, and will be reviewed again:

Expected Production: Milk (cwt): This shows the expected long position for the dairy at 21,608 cwt. If the operators of Bella Acres Dairy do not actively market their milk but instead rely on the cash market to price their milk shipments, then this is the amount of product that they are long in the market.

Grown Feed Cost's ($'s): This shows the cost to the dairy of the feed that they are purchasing from the cropping enterprise. For Bella Acres Dairy this is $46,667.89.

Purchased Ingredient Costs: This shows the cost to the dairy for the feed ingredients that must be purchased. This is $44,977.14

Replacement Livestock Expense: This shows the cost to the dairy for the heifer replacements that must be purchased from the Dairy Heifer enterprise. This is $41,175.

Livestock Expense: This shows the cost to the dairy for the allocated livestock expenses. This cost is $45,681.

Total Livestock Costs ($'s): Summing the feed, replacement livestock, and livestock expense provides the Total Livestock Cost. For Bella Acres Dairy this is $178,501.03.

Allocated Expenses: The allocated expenses for Machinery, Labor, Land and Buildings and Miscellaneous are $42,188.20, $47,628, $29,119.30 and $5,250 respectively.

By-Product Income: This amount is subtracted from the cost of producing milk. The $21,000 is the amount of cash inflow from the sale of by-product jointly produced in the process of producing milk. For Bella Acres Dairy this represents the anticipated cash inflow from cull cows, calves and other dairy purposes sales.

Total Cost ($'s): This is the total economic cost associated with producing milk at Bella Acres Dairy. The $281,686.53 represents all allocated cash outflows including depreciation and interest on owner equity. The **ONLY** recorded expenses that are **NOT INCLUDED** are **Family Living** and **Social Security / Income Taxes** owed on the value of Operators Labor. Compensation to **Operator Labor** (but not management) and **Unpaid Family Labor** are both necessary to secure the 21,608 cwt. from the milking cow herd. **Family Living** withdraw and **Social Security / Income Taxes** owed on operators labor are necessary cash-flow items but are not necessary to secure the milk production, and therefore are not a cash-flow production expense. Bella Acres Dairy has a total economic cost per cow (milking herd only) of $2,816.86.

Break-Even Price Needed: The **Break-Even Price Needed** is the **Total Cost** divided by total expected production. That is, it is the price that is required to offset the estimated production costs. For the Bella Acres Dairy Cow enterprise, the break-even price is calculated at $13.04 per cwt. If the operators of Bella Acres Dairy can secure an average price per cwt. equal to $13.04 they will have completely covered all of the associated costs of producing milk at Bella Acres Dairy. Note, however that this price does not return any cash flow for the category Family Living. As it does include the cash flow for both the value of the operators labor and unpaid family labor, the Family Living withdraw must come out of those charges if this is the target price.

Cash Flow Break-even/cwt.: The **Cash Flow Break-even** is the total cash flow requirement (minus any non-production payments) divided by the expected production. That is, it is an estimate of the required price that is needed to offset the cash flow obligations for Bella Acres Dairy. This amount will be different than the Break-even Price Needed as it excludes depreciation, interest on equity, and value of unpaid labor. For the Bella Acres Dairy milking enterprise this price is $9.47 per cwt. If the operators of Bella Acres Dairy can achieve an average price per cwt. of $9.47 they will be able to cover all direct cash flow obligations, at least in the short-term.

Cash Flow Risk Ratio: The **Cash Flow Risk Ratio** signifies the percent of the production that must be sold at the expected market price to meet all cash obligations. The ratio is calculated as follows:

Cash Flow Risk Ratio = Cash Flow Break-even/cwt. divided by Product Expected Price.

A smaller **Cash Flow Risk Ratio** indicates a greater ability to bear price or production risk. For milk, the Bella Acres Dairy must sell 75% of the expected production at $12.56/cwt to cover cash flow. If cash milk prices decline, more of the milk production will have to be sold to meet the cash flow requirement.

An Assessment for Bella Acres Dairy Enterprise: The owners / operators of Bella Acres Dairy are in a difficult position. After a careful expensing of grown feed requirements, purchased feed ingredients, along with an appropriate allocation of expenses, they are faced with the following situation. They require an average price per cwt. of $13.04/cwt to cover all economic cost associated with producing milk. If they are willing to forego depreciation charges and interest on their substantial equity in the farm business they can survive on $9.47/cwt for the short-term. Clearly they must make some changes in the structure of Bella Acres Dairy. A careful review of the Risk Position reports for the other enterprises may well suggest where these changes must be made.

At this point we will focus on the right panel of the **DAIRY RISK POSITION** screen. The right panel is where the actions of the **MARKETING ALTERNATIVES** menu are displayed.

Total Product for Sale: This is the long position for any product produced by the farm before any marketing activities. If the operators of Bella Acres Dairy sold all of the milk output on the cash market then this is the amount they will have at risk of a price decline. The Total Product for Sale is 21,608 cwt of milk.

Fwd Priced Contracts: This entry shows the amount of milk that has been priced by using a forward price instrument. In the case it is 3,500 cwt. and this amount reduces the price risk exposure to Bella Acres Dairy.

Short Futures: This entry displays the amount of product that has been priced by use of a short hedge position in the futures market. Here we see that Bella Acres Dairy has prices another 1,000 cwt using this instrument.

Put (hedge contract): This entry displays the amount of milk that the Operators of Bella Acres Dairy have floor priced using a put options contract. This amount is 1,000 cwt.

Long Futures: This entry displays the quantity of product that the farm business would be long if the operators decided to SPECULATE by purchasing futures contracts. By purchasing a futures contract the operators are exposing the farm business to added risk and increasing the

long position of the farm business. Bella Acres Dairy is not speculating and the long futures position is zero.

Call: This entry displays the quantity of product that the farm business would be long if the operators decided to SPECULATE by selling Call contracts in the Options market. By selling a call contract the operators are exposing the farm business to added risk and increasing the long position of the farm business. Bella Acres Dairy is not speculating and Call contracts are zero.

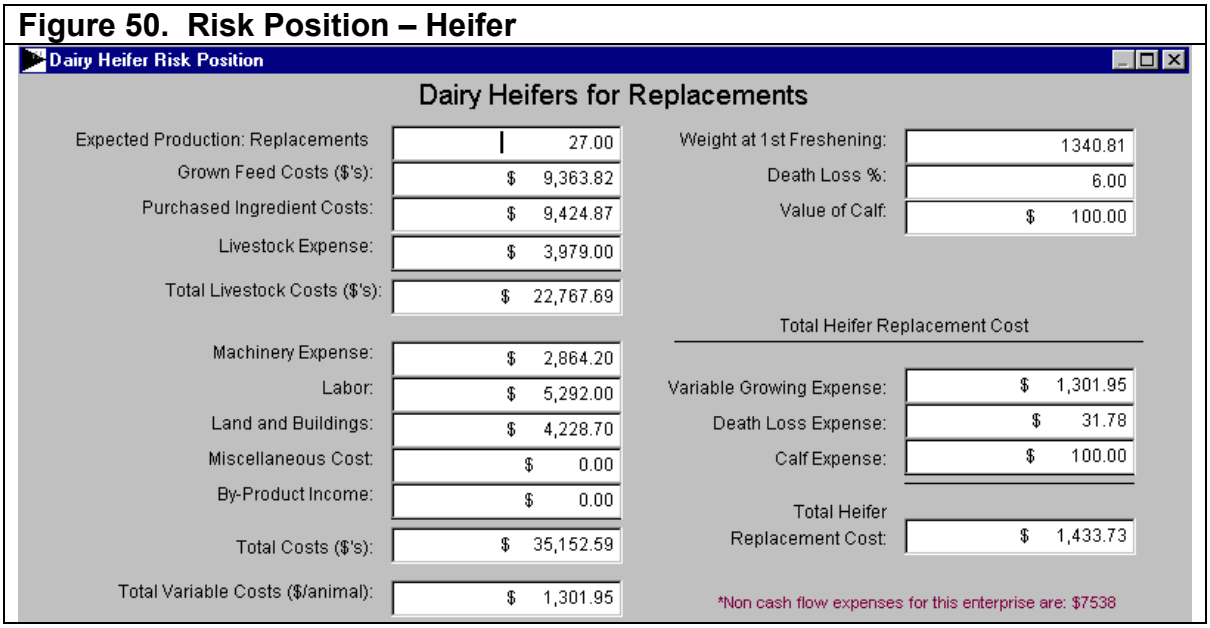
Adding together these proactive marketed or priced activities comes to 5,500 cwt. of the original 21,608 anticipated production for Bella Acres Dairy. Subtracting this amount from the total production leaves a net long position of 16,108 cwt. Bella Acres Dairy is at risk if market cash prices decline on this 16,108 cwt. of anticipated milk production.

Avg. Price (Mktg. Alt) This entry is a weighted-average return to the various marketing positions taken by Bella Acres Dairy. This is calculated within the MRP / Dairy™ program by taking the relative share of milk for each marketing alternative and multiplying by that alternative's price. In the case of Bella Acres Dairy, this weighted-average return to the marketing actions or plans is $13.60 per cwt. This is higher than the **Cash Flow Break-even** of 9.47/cwt and also higher than the **Break-even Price Needed** of $13.04/cwt. It is also higher than the anticipated cash market average price of $12.56.

Risk Position: HEIFER

In this section we will examine the risk position screen for **HEIFER**. In this example, Bella Acres Dairy expects to produce 27 dairy heifer replacement cwt. of milk over the next year.

Figure 50. Risk Position – Heifer


Dairy Heifer Risk Position
Dairy Heifers for Replacements
Expected Production: Replacements 27.00
Grown Feed Costs ($'s): $ 9,363.82
Purchased Ingredient Costs: $ 9,424.87
Livestock Expense: $ 3,979.00
Total Livestock Costs ($'s): $ 22,767.69
Machinery Expense: $ 2,864.20
Labor: $ 5,292.00
Land and Buildings: $ 4,228.70
Miscellaneous Cost: $ 0.00
By-Product Income: $ 0.00
Total Costs ($'s): $ 35,152.59
Total Variable Costs ($/animal): $ 1,301.95
Weight at 1st Freshening: 1340.81
Death Loss %: 6.00
Value of Calf: $ 100.00
Total Heifer Replacement Cost
Variable Growing Expense: $ 1,301.95
Death Loss Expense: $ 31.78
Calf Expense: $ 100.00
Total Heifer Replacement Cost: $ 1,433.73
*Non cash flow expenses for this enterprise are: $7538

Expected Production: Replacements: This shows the expected production of dairy heifers for replacements of 27 heifers.

Grown Feed Cost's ($'s): This shows the cost to the farm of the heifer feed that they are purchasing from the cropping enterprise. For Bella Acres Dairy this is $9,363.82.

Purchased Ingredient Costs: This shows the cost to the dairy for the feed ingredients for heifers that must be purchased. This is $9,424.87.

Livestock Expense: This shows the cost to the dairy for the allocated heifer livestock expenses. This cost is $3,979.

Total Livestock Costs ($'s): Summing the feed and livestock expenses provides the Total Livestock Costs. For Bella Acres Dairy this is $22,767.69.

Allocated Expenses: The allocated expenses for Machinery, Labor, Land and Buildings, Miscellaneous Costs, and By-Product Income are $2,864.20, $5,292, $4228.70, $0.00, and $0.00, respectively.

Total Cost ($'s): This is the total economic cost associated with producing milk at Bella Acres Dairy. The $35,152.59 represents all allocated cash outflows including depreciation and interest on owner equity. The **ONLY** recorded expenses that are **NOT INCLUDED** are **Family Living** and **Social Security / Income Taxes** owed on the value of Operators Labor. Compensation to **Operator Labor** (but not management) and **Unpaid Family Labor** are both necessary to secure the 27 dairy heifer replacements from the milk cow herd. **Family Living** withdraw and **Social Security / Income Taxes** owed on operators labor are not necessary to secure the milk production, and therefore are not a legitimate production expense. Bella Acres Dairy has a total economic cost for dairy heifer replacement of $35,152.59.

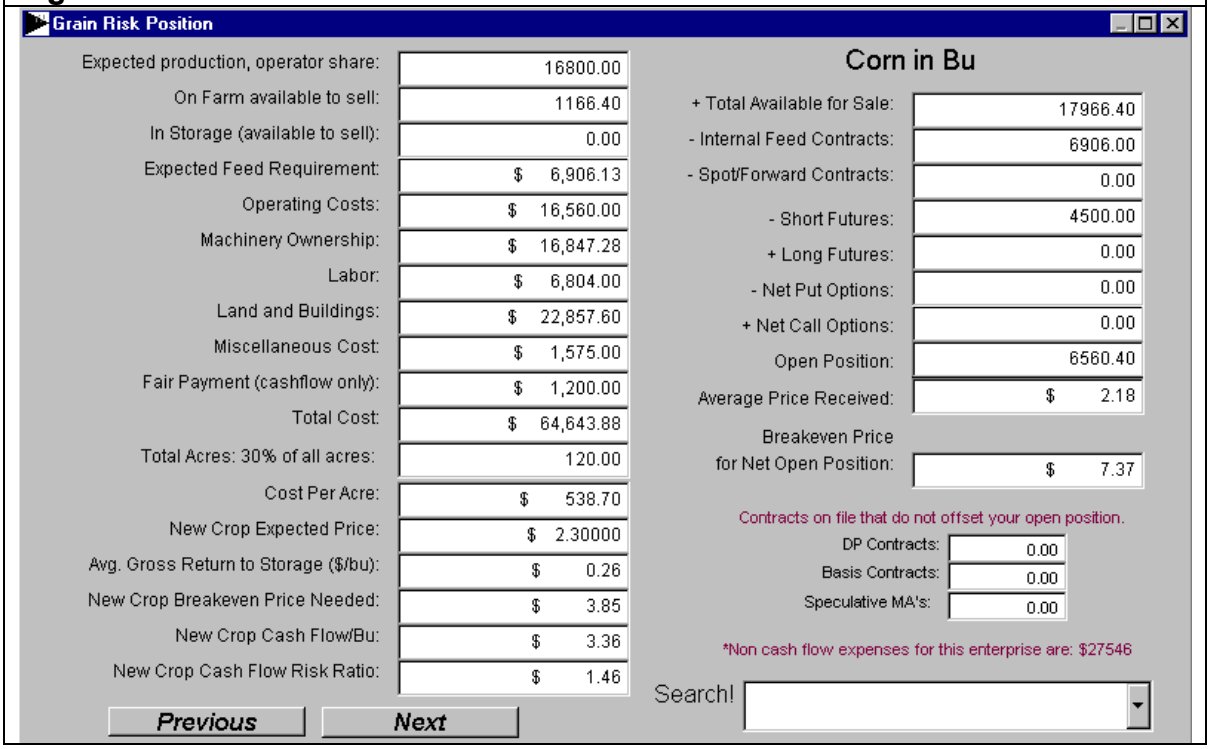
Total Variable Costs ($/animal): The **Total Variable Costs ($/animal)** is the **Total Costs** divided by total expected production of dairy heifer replacements. That is, it is the price that is required to offset the estimated production costs. For the Bella Acres Heifer enterprise, the total variable cost per animal is calculated at $1,301.95/animal. If the operators of Bella Acres Dairy can secure an total variable cost per animal equal to $1,301.95/animal, they will have completely covered all of the associated costs of producing replacement heifers at the Bella Acres Dairy. Note, however that this cost does not return any cash flow for the category Family Living. As it does include the cash flow for both the value of the operators labor and unpaid family labor, the Family Living withdraw must come out of those charges.

Risk Position: GRAIN

To begin with we will examine the risk position screen for **GRAIN (Figure 51)**. This will serve to illustrate how the production and variable cost data are summarized and how various fields are defined. In this example, Bella Acres Dairy expects to produce 16,800 bushels

of corn **OUT OF NEXT YEARS CROP. NOTE:** this amount represents a new crop, not a crop already harvested. If an old crop exists then this will be reported using the **GRAIN ASSETS** menu and is shown as **On Farm available to sell** 1,166 bushels.

Figure 51. Risk Position – Grain: Corn


Grain Risk Position
Expected production, operator share: 16800.00
On Farm available to sell: 1166.40
In Storage (available to sell): 0.00
Expected Feed Requirement: $ 6,906.13
Operating Costs: $ 16,560.00
Machinery Ownership: $ 16,847.28
Labor: $ 6,804.00
Land and Buildings: $ 22,857.60
Miscellaneous Cost: $ 1,575.00
Fair Payment (cashflow only): $ 1,200.00
Total Cost: $ 64,643.88
Total Acres: 30% of all acres: 120.00
Cost Per Acre: $ 538.70
New Crop Expected Price: $ 2.30000
Avg. Gross Return to Storage ($/bu): $ 0.26
New Crop Breakeven Price Needed: $ 3.85
New Crop Cash Flow/Bu: $ 3.36
New Crop Cash Flow Risk Ratio: $ 1.46
Previous
Next
Corn in Bu
+ Total Available for Sale: 17966.40
- Internal Feed Contracts: 6906.00
- Spot/Forward Contracts: 0.00
- Short Futures: 4500.00
+ Long Futures: 0.00
- Net Put Options: 0.00
+ Net Call Options: 0.00
Open Position: 6560.40
Average Price Received: $ 2.18
Breakeven Price for Net Open Position: $ 7.37
Contracts on file that do not offset your open position.
DP Contracts: 0.00
Basis Contracts: 0.00
Speculative MA's: 0.00
*Non cash flow expenses for this enterprise are: $27546
Search!

Since Bella Acres Dairy has some old crop in storage, the total bushels for sale equals 16,800 + 1,166 = 17,966 bushels. There are no bushels In Storage (available to sell / commercial) and the dairy already has claim to 6,906 bushels for feeding next harvest period **Expected Feed Requirement**. Operating or variable costs equaling $16,560 are reported in the **Operating Costs** field. Following down the column on the left side the **Total Cost** attributed to the **Corn Grain Enterprise** is calculated to be $64,643.88.

The Bella Acres Dairy expects to plant 30% of the **Total Acres** or 120 acres of grain corn. The **Cost per Acre** is identified as $538.70. The new crop expected price is $2.30 per bushel. This is the expected price that was entered on the **EXPECTED MARKET PRICES** screen. The expected crop price is the producer's best estimate of prices at harvest time for new crop. These estimates may be based on outlook information, localized futures prices (the harvest futures prices minus basis) and/or on the farmer's own estimates.

Average gross return to storage is calculated as $0.26 per bushel and is transferred from the **GRAIN ASSETS** screen.

The **Break-Even Price Needed** is the total cost divided by total expected production. That is, it is the price that is required to offset the estimated production costs. For corn, the break-even price is estimated at $3.85 per bushel. If the operators of Bella Acres Dairy can secure an average price per cwt. equal to $3.85 they will have completely covered all of the associated costs of producing a bushel of corn grain at Bella Acres Dairy. Note, however that this price does not return any cash flow for **Family Living**. As it does include the cash flow for both the value of the operators labor and unpaid family labor, the Family Living withdraw must come out of those charges.

The **Cash Flow Break-even** is the total cash flow requirement (minus any non-production payments) divided by the expected production. That is, it is an estimate of the required price that is needed to offset the cash flow obligations for Bella Acres Dairy. This amount will be different than the Break-even Price Needed as it excludes depreciation, interest on equity, and value of unpaid labor. For the Bella Acres Dairy corn grain cropping enterprise this price is $3.36 per cwt. If the operators of Bella Acres Dairy can achieve an average price per cwt. of $3.36 they will be able to cover all direct cash flow obligations, at least in the short-term.

The **Cash Flow Risk Ratio** signifies the percent of the production that must be sold at the expected market price to meet all cash obligations. The ratio is calculated as:

Cash Flow Risk Ratio = Cash Flow Break-even/bu. divided by Product Expected Price.

A smaller **Cash Flow Risk Ratio** indicates a greater ability to bear price or production risk. For corn grain, if Bella Acres Dairy sold the entire new crop at $2.30 there would be a shortfall of 46% of the total enterprise cost of production. Clearly with this anticipated cash corn price the Operators of Bella Acres cannot meet the cash flow requirement for the corn enterprise.

The data on other **GRAIN** crops (Soybean) and **FORAGES** (Corn Silage, Hay Silage, Hay Bales) are summarized on separate **RISK POSITION** screens. To view other crops or forages within a risk position screen, use the mouse to click on the **PREVIOUS** or **NEXT** buttons. To exit the **MY RISK** screen, use the mouse to click on the **Close Screen** button. This returns the user to the main **MENU**.

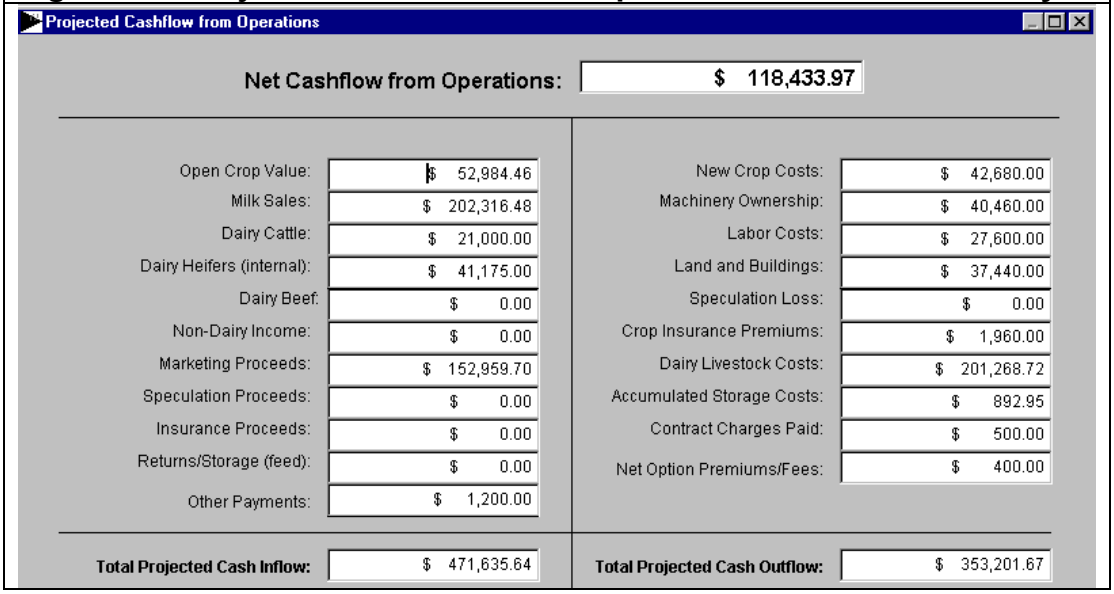
WHOLE FARM FINANCIAL REPORTS

MRP / Dairy™ includes a number of whole farm financial reports. Whole Farm Financial Reports are shown in **MY PROFIT.** A pull-down screen is revealed and includes **PROJECTED CASH FLOW FROM OPERATIONS**, **PROJECTED CASH FLOW RISK RATIO**, and **PROFITABILITY (Figure 48).**

PROJECTED CASH FLOW FROM OPERATIONS

This summary report is designed to analyze the cash inflows and outflows. The **PROJECTED CASH FLOW FROM OPERATIONS** brings up two screens. The **PROJECTED CASH FLOW FROM OPERATIONS** as shown in **Figure 52**.

Figure 52. Projected Cash Flow from Operations – Bella Acres Dairy


Projected Cashflow from Operations
Net Cashflow from Operations: $ 118,433.97
Open Crop Value: $ 52,984.46
Milk Sales: $ 202,316.48
Dairy Cattle: $ 21,000.00
Dairy Heifers (internal): $ 41,175.00
Dairy Beef: $ 0.00
Non-Dairy Income: $ 0.00
Marketing Proceeds: $ 152,959.70
Speculation Proceeds: $ 0.00
Insurance Proceeds: $ 0.00
Returns/Storage (feed): $ 0.00
Other Payments: $ 1,200.00
Total Projected Cash Inflow: $ 471,635.64
New Crop Costs: $ 42,680.00
Machinery Ownership: $ 40,460.00
Labor Costs: $ 27,600.00
Land and Buildings: $ 37,440.00
Speculation Loss: $ 0.00
Crop Insurance Premiums: $ 1,960.00
Dairy Livestock Costs: $ 201,268.72
Accumulated Storage Costs: $ 892.95
Contract Charges Paid: $ 500.00
Net Option Premiums/Fees: $ 400.00
Total Projected Cash Outflow: $ 353,201.67

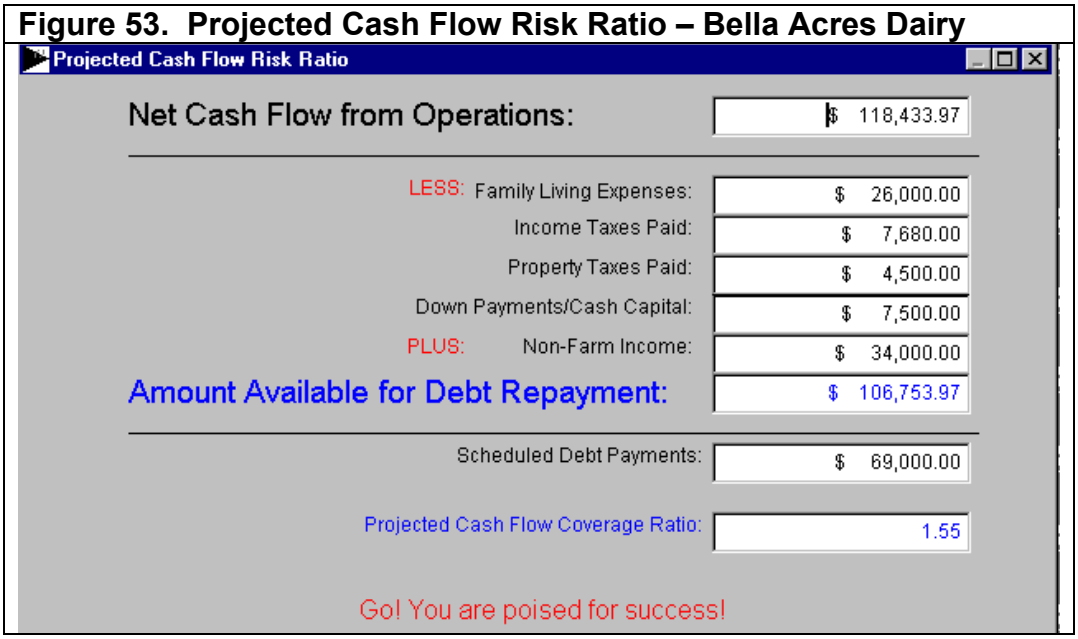
The right-hand panel on the **PROJECTED CASH FLOW FROM OPERATIONS** screen shows the total cash inflows from all of the farm's enterprises. The left- hand panel shows all of the farm's cash outflows necessary to support the farm's enterprises. NOTE: the cash-outflow is "out of pocket" or "only those expenses for which the farm management must write a check to pay". Cash outflows do not include depreciation nor do they include equity charges. A review of the **PROJECTED CASH FLOW FROM OPERATIONS** shows that Bella Acres Dairy has a projected total cash inflow of $471,635.64 and a total cash outflow of $353,201.67. The **PROJECTED CASH FLOW FROM OPERATIONS** position is $118,433.97. It is out of this projected net cash flow from operations that the operators of Bella Acres Dairy must derive an operating margin to provide for depreciation, unpaid family and operator labor, and interest on equity.

PROJECTED CASH FLOW RISK RATIO

The **PROJECTED CASH FLOW RISK RATIO** is shown in **Figure 53**. The CASH FLOW COVERAGE RATIO measures the ability of the farm business to meet planned debt payments. The CASH FLOW COVERAGE RATIO shows the number of times the amount

available for debt service will cover debt payment obligations over the production-planning period.

Figure 53. Projected Cash Flow Risk Ratio – Bella Acres Dairy

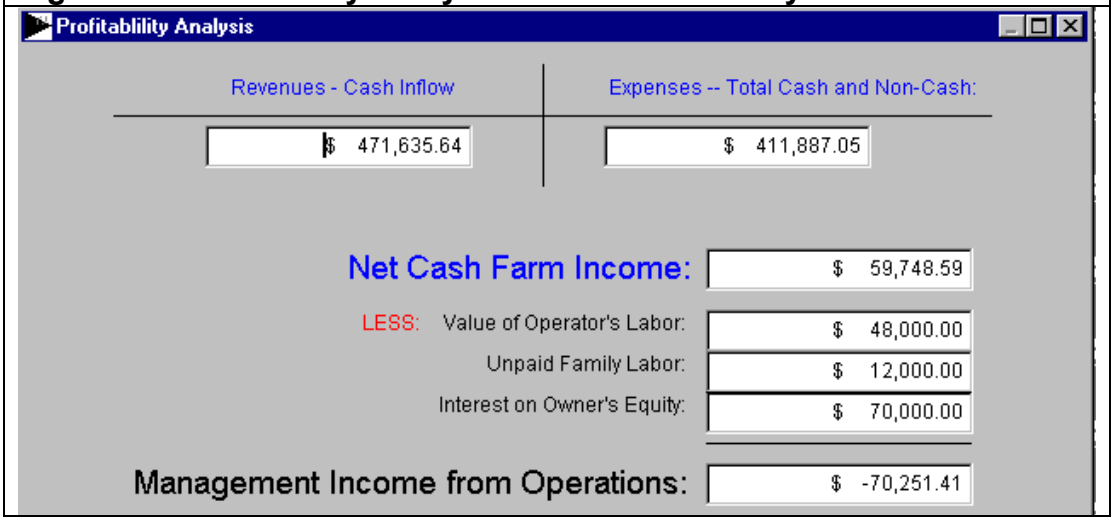


For the Owners of Bella Acres Dairy the **NET CASH FLOW FROM OPERATIONS** is transferred to the **PROJECTED CASH FLOW RISK RATIO** screen in the amount of $118,433.97. After subtracting **FAMILY LIVING EXPENSES**, **INCOME TAXES PAID** (on owner and family income), **PROPERTY TAXES PAID**, **DOWN PAYMENTS/CASH CAPITAL** and adding back all sources of **NON-FARM INCOME** the anticipated amount of cash on hand to cover planned debt payments is $106,753.97. With a **SCHEDULED DEBT PAYMENTS** amount of $69,000 the **PROJECTED CASH FLOW COVERAGE RATIO** is calculated as 1.55. The **PROJECTED CASH FLOW COVERAGE RATIO** is calculated by dividing **AMOUNT AVAILABLE FOR DEBT REPAYMENT** by **SCHEDULED DEBT PAYMENTS**. This ratio raises management concerns whenever it is less than 1.2. At 1.55 there is 1.55 dollars available to cover each dollar of planned debt payments. This is above 1.2 indicating that the operators of Bella Acres are sufficiently solvent in the finances.

PROFITABILITY ANALYSIS

The **PROFITABILITY ANALYSIS** screen as shown in **Figure 54**. The information on the Profitability Analysis screen tells the owners of Bella Acres Dairy the value of **NET FARM INCOME** and **MANAGEMENT INCOME FROM OPERATIONS.**

Figure 54. Profitability Analysis – Bella Acres Dairy



It shows whether or not there is a sufficient **NET FARM INCOME** to return **INTEREST ON OWNER'S EQUITY**, plus **UNPAID FAMILY LABOR**, plus **VALUE OF OPERATORS LABOR** to the farm business. Bella Acres Dairy is a profitable and sustainable business operation if the **MANAGEMENT INCOME FROM OPERATIONS** is positive. The **PROFITABILITY ANALYSIS** screen for Bella Acres Dairy shows that after depreciation has been included in the total economic costs, the **NET CASH FARM INCOME** is $59,748.59. Charges for unpaid family and operator labor and interest on owner equity leave the management income a negative $70,251.41 Unfortunately for Bella Acres there is not sufficient **NET CASH FARM INCOME** to support a positive **MANAGEMENT INCOME FROM OPERATIONS**.

For Bella Acres Dairy, after the operators have paid themselves a total income of $59,748 (which is a bit less than the sum of the Value of Operator labor plus Unpaid family labor) they will have to forego the interest return of $70,000 which should be charged on their equity in the business, and they must also accept a zero return to their risk bearing and management input. In short, under the present circumstances, Bella Acres Dairy is cash-flowing but is not a profitable business.

However, on an equity investment of $1,400,000 this represents non-sustainable financial position in the long-term. The owners of Bella Acres Dairy are faced with a couple of options. They could sell their assets in the dairy, invest the equity position in a less risky asset and secure a non-zero return, and find alternative employment and earn a higher standard of living overall. Clearly if the operators of Bella Acres desire to stay in dairying they must seek to either reduce the cost side of their operation or increase the revenue earned from the dairy, and possibly both to be in a position to enjoy a positive **MANAGEMENT INCOME FROM OPERATIONS.** Now you have completed the User's Guidebook for Managing Risk and Profits / Dairy©. You are in a position to begin entering the data for your dairy business and developing your own marketing and risk management plan. You can now begin to use the Managing Risk and Profits / Dairy© to provide a strategic marketing framework for your dairy business.